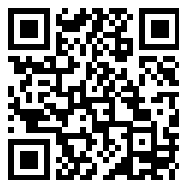

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CATALOGUE OF INSECTS

FOUND IN

NEW JERSEY.

John Bernhard Smith

[FROM THE FINAL REPORT OF THE STATE GEOLOGIST, VOL. II.]

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CATALOGUE OF INSECTS FOUND IN NEW
JERSEY.

BY JOHN B. SMITH.

CATALOGUE OF INSECTS FOUND IN NEW JERSEY.

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INTRODUCTION.

Any faunal list making pretense to completeness, must be based upon years of careful collecting and observation, not by one, but by many individuals. In my work of compiling the present list I have been hampered in every possible direction, and incompleteness of the work will, I hope, be not entirely charged as incompetence in the compiler. The labor on material for the list has been confined to the few spare hours I could gather from a summer's active field-work, and to about three weeks' work in compiling the results obtained from my correspondents. New Jersey offers quite distinct contrasts in her geological features, and, as this influences the botany to a very large extent, it necessarily also affects the character of the insect fauna. There are no large general collections of insects in the State, and records of this kind were shut off. Collectors of insects are few, and are massed in two or three localities, hence many parts of the State are entirely unexplored, and the contrasts between the fauna of the sandy pine-barren region and of the rocky Orange mountain district are not well brought out. Collectors lacking, little material has come into the hands of the systematists, and hence there are few references in the literature to New Jersey as the home of species. Pennsylvania and New York are constantly referred to. New Jersey seldom. The material for a list of insects was therefore not to be sought in literature. In Philadelphia there are a number of active collectors who do a large part of their collecting in this State. From some of these I have obtained most valuable lists of captures. The excursions made by these gentlemen were generally confined to the Camden and Gloucester county region, or extended to the sea-shore—a part of the pine

barrens was therefore covered, but not nearly as thoroughly as desirable. Unfortunately these gentlemen were all collectors of *Coleoptera* or of *Lepidoptera*, and in *Lepidoptera* of only small portions of the order. So far as the fauna of the pine barrens is concerned, we know absolutely nothing of it save in *Coleoptera* and *Lepidoptera*. In Newark and its immediate vicinity are a number of collectors who have formed an Entomological Society, which holds semi-monthly meetings. This society and its members have furnished me valuable lists giving the collective experiences of its members. These lists are cited in the following pages as the "Newark List," and the species are generally taken not many miles from the city of Newark. As this includes territory from salt marshes to mountain, further specialization in future lists will be desirable. As in Philadelphia, all the collectors confine themselves to *Coleoptera* or *Lepidoptera*, and in *Lepidoptera* none collect the micros, so called. The only collector who has a general collection of any size is Mr. M. S. Crane, of Caldwell, and from him I had lists in *Hymenoptera*, *Hemiptera*, *Diptera*, *Orthoptera*, *Neuroptera*, *Coleoptera* and *Lepidoptera*, which proved of the greatest assistance to me. In the cities of New York and Brooklyn there are a considerable number of entomologists and collectors who do a great deal of their collecting in New Jersey, and some of these have added materially to the completeness of the present list. As usual, these gentlemen confine themselves to *Coleoptera* and *Lepidoptera*. Had the time been less pressing I could probably have gotten further aid from these gentlemen, but the collecting season and immediately after are bad times to expect aid from entomologists. It will be noticed that, except in *Coleoptera* and *Lepidoptera*, New Jersey is practically unexplored, and even in the collected orders, northern and northwestern New Jersey are entirely unrepresented. These facts must be my excuse for any incompleteness in the list. So far as my own collections are concerned, I must say that I lived in the city of Brooklyn during the period of my most enthusiastic collecting days and that many a pleasant day was passed in the hills back of Montclair, in the woods near Fort Lee, or in early spring along the foot of the Palisades from Hoboken to Weehawken and further north. I have also spent many pleasant days on Dr. Brakeley's plantations in Ocean county and have taken many good species there. As I collected in all orders, I have been able to add considerable to all lists, from my own experience.

To specialize: In the *Hymenoptera* I have used Mr. E. T. Cres-

son's classification and list as a guide, and have included all the species marked by him as occurring in New Jersey, as well as those so distributed that their occurrence in the State is certain. Mr. M. S. Crane furnished me with a very good list of his captures, and, supplemented by my own experience, this added to the accuracy of the list. Finally, by the courtesy of the American Entomological Society, I was enabled to examine the E. T. Cresson collection of *Hymenoptera*, from which I gleaned many New Jersey species, and Mr. Geo. B. Cresson, the curator of the Society, kindly gave me a list of specimens recently taken near Westville, all of which aided in completing the list.

In *Coleoptera*, the Henshaw check list has been my guide. Messrs. Charles Liebeck and Henry W. Wenzel, of Philadelphia, have furnished me most excellent annotated lists of the species taken by them. The Newark list was very full in some families and forms an important part of the record. In the *Carabidæ*, a list of the species taken near New York by Mr. F. G. Schaupp, which I aided in compiling some years ago, furnished many species. In the families of rove and water beetles (*Staphylinidæ*, *Dytiscidæ*, *Hydrophilidæ*, &c.), all the general lists were poor, and as my own collection, now in the United States National Museum, contained many species from this State, I obtained, through the courtesy of Mr. Howard, acting for Professor Riley, a list of these species in the National Museum.

Mr. M. L. Linell, Professor Riley's aide in the museum, also kindly furnished me with a partial list of his collections in New Jersey, and these were very valuable.

Dr. John Hamilton, of Allegheny, Pennsylvania, had passed a short season in September at Brigantine Beach for some years past, and his list of captures was of extreme interest. Mr. C. H. Roberts, who makes rather a specialty of aquatic *Coleoptera*, furnished me with a list of the New Jersey specimens in his collection, which largely supplemented the other lists. Mr. W. Julich, of New York, gave a most excellent list of *Rhynchophora* taken by himself. Mr. Fred. C. Paulmier, of Madison, N. J., furnished me a list of captures, which, though small in extent, was still valuable as adding facts in the distribution of some species. A few days spent in collecting at Anglesea, near Cape May, in company with Messrs. E. A. Schwarz, of Washington, and H. W. Wenzel, of Philadelphia, produced a large number of species which were kindly determined and listed by Mr. Schwarz. Finally, to the courtesy of Dr. Horn I owe an opportunity of examining his

extensive collection, and from this I obtained many records not on other lists. The list in *Coleoptera* is very fairly complete in most families. Mr. Samuel Henshaw, of Cambridge, also sent me a short list containing several species not elsewhere noted.

In *Lepidoptera*, the list furnished by the Newark society was the base. In the *Rhopalocera*, Mr. E. M. Aaron, of Philadelphia, gave me a most valuable list, and the records in the lists and works of Messrs. Strecker, Edwards and Scudder, supplemented by my own experience, have made this part of the list almost complete. Mr. Scudder's order of genera has been followed.

In the Sphingid and Zygænid families, my own works have been followed, and I believe the list to be nearly complete. In the balance of the Macro-Lepidoptera, Mr. Grote's list has been, in the main, followed; the Newark list being supplemented chiefly by my own experience. In the Geometridæ and Pyralidæ, Rev. Geo. D. Hulst, of Brooklyn, has furnished the material for the list almost as it stands. In the *Tortricidæ*, Professor Fernald's catalogue has given me most of the information. In the *Tineidæ*, Mr. Wm. Beutenmüller, of the American Museum of Natural History, has furnished the entire list, which is based almost exclusively upon his own collections and observation. Mr. Simon Seib, of Newark, gave me a list containing many dates, and this has been utilized as far as possible.

In the *Diptera*, Baron Osten-Sacken's catalogue has been my guide, supplemented in the *Syrphidæ* by Dr. S. W. Williston's excellent monograph. Mr. Crane furnished me with a record of his captures in this order, and this, in addition to my own observations, gives a basis of fact to this part of the list.

In the *Orthoptera*, Mr. Lawrence Bruner, of Lincoln, Nebraska, has kindly furnished the list, which I have used exactly as he sent it, simply adding the records obtained from Mr. Crane and my own collecting. All the matter in brackets [] represents additions by myself.

In the *Hemiptera-Heteroptera*, Uhler's check list has been my guide, supplemented by Mr. Crane's records and my own collections.

In the *Hemiptera-Homoptera*, Mr. W. H. Ashmead, of Jacksonville, Fla., has kindly furnished the list, and very little, indeed, has been added to it by Mr. Crane's records and my own collecting.

In the *Neuroptera*, Dr. Hagen's synopsis has been my guide. Mr. Crane's list contained many species. I took many myself during the

season. In running over the collection of the American Entomological Society I obtained a few records not otherwise obtainable.

The *Thysanura* have been entirely omitted, since there have been absolutely no collections made and no lists exist.

For much the same reasons all reference to the sub-class *Arachnida* and *Myriapoda* has been omitted, though the *Arachnida* at least are well represented in the State.

Finally, I desire to thank, most sincerely, the gentlemen who by their courtesy and assistance have enabled me to give to the present catalogue its measure of completeness.

CATALOGUE OF INSECTS.

Family TENTHREDINIDÆ.**Sub-Family CIMBICINÆ.****CIMBEX, Oliv.**

C. americana, Leach.

Common at Caldwell—Crane.

TRICHIOSOMA, Leach.

T. triangulum, Kirby.

ZARÆA, Leach.

Z. americana, Cress.

Z. inflata, Norton.

ABIA, Leach.

A. cerasi, Fitch.

ACORDULECERA, Say.

A. dorsalis, Say.

Sub-Family HYLOTOMINÆ.**SCHIZOCERUS, Latr.**

S. ebenus, Norton.

S. plumiger, Klug.

S. sericeus, Norton.

ATOMACERA, Say.

A. ruficollis, Norton.

THEMOS, Norton.

T. hyaline, Norton.

HYLOTOMA, Latr.

H. abdominalis, Leach.

H. cœrulea, Norton.

H. humeralis, Beauv.

New Jersey specimens are in Mr. Cresson's collection.

H. mcleayi, Leach.

H. pectoralis, Leach.

H. rubiginosa, Beauv.

H. rubra, Klug.

H. scapularis, Klug.

Rare at Caldwell—Crane.

Sub-Family TENTHREDININÆ.

CLADIUS, Illig.

C. isomera, Harris.

PRIOPHORUS, Dahlb.

P. æqualis, Norton.

PRISTIPHORA, Latr.

P. grossulariæ, Walsh.

P. identidem, Norton.

P. tibialis, Norton.

EUURA, Newn.

E. orbitalis, Norton.

E. salicis-nodus, Walsh.

E. salicis-ovum, Walsh.

CRÆSUS, Leach.

C. latitarsus, Norton.

NEMATUS, Jur.

N. aureopectus, Norton.

N. bivittatus, Norton.

N. chloreus, Norton.

N. concolor, Norton.

N. corniger, Norton.

New Jersey specimens are in Mr. Cresson's collection.

N. erythrogaster, Norton.

N. fulvipes, Norton.

N. integer, Say.

New Jersey specimens are in Mr. Cresson's collection.

N. lateralis, Norton.

N. longulicornis, Norton.

N. luteolus, Norton.

N. luteotergum, Norton.

N. pallicornis, Norton.

N. proximatus, Norton.

N. ribesii, Scop.

I have taken this in the State, myself. It is the common currant slug. Common at Caldwell—Crane.

N. similis, Norton.

N. subalbatus, Norton.

N. trilineatus, Norton.

N. trivittatus, Norton.

N. ventralis, Say.

New Jersey specimens are in Mr. Cresson's collection.

N. vertebratus, Say.

MESSA, Leach.

M. hyalina, Norton.

FENUSA, Leach.

F. ambigua, Norton.

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EMPHYTUS, Klug.

- E. apertus**, Norton.
- E. cinctipes**, Norton.
- E. inornatus**, Say.
- E. mellipes**, Norton.

HARPIPHORUS, Hartig.

- H. maculatus**, Norton.
- H. semicornis**, Say.
- H. tarsatus**, Say.
- H. testaceus**, Norton.
- H. varianus**, Norton.
- H. versicolor**, Norton.

DOLERUS, Jur.

- D. abdominalis**, Norton.
Taken at Caldwell by Mr. Crane.
- D. albifrons**, Norton.
Taken at Caldwell by Mr. Crane.
- D. apricus**, Norton.
I have taken this myself in New Jersey.
- D. arvensis**, Say.
I have taken this at New Brunswick, in early spring; not common.
- D. bicolor**, Beauv.
New Jersey specimens are in Mr. Cresson's collection.
- D. collaris**, Say.
- D. maculicollis**, Norton.
- D. sericeus**, Say.
- D. similis**, Norton.
- D. unicolor**, Beauv.
Taken at Caldwell by Mr. Crane.

BLENNOCAMPA, Hartig.

B. capitalis, Norton.

B. pygmæa, Say.

I have taken this in New Jersey.

MONOPHADNUS, Hartig.

M. caryæ, Norton.

M. tilizæ, Norton.

New Jersey specimens are in Mr. Cresson's collection.

M. marginicollis, Norton.

M. medius, Norton.

Recorded from New Jersey.

M. rubi, Harris.

M. tilizæ, Norton.

PHYMATOCERA, Dahlb.

P. fumipennis, Norton.

New Jersey specimens are in Mr. Cresson's collection.

P. nubilipennis, Norton.

P. rudis, Norton.

HOPLOCAMPA, Hartig.

H. halcyon, Norton.

CALIROA, Costa.

C. obsoleta, Norton.

MONOSTEGIA, Costa.

M. ignota, Norton.

M. quercus-alba, Norton.

M. rosæ, Harris.

I have taken this in New Jersey.

ERIOCAMPA, Hartig.

E. cerasi, Peck.

I have seen this in the State.

E. fasciata, Norton.

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SELANDRIA, Leach.

S. flavipes, Norton.

New Jersey specimens are in Mr. Cresson's collection.

S. media, Norton.

New Jersey specimens are in Mr. Cresson's collection.

ALLANTUS, Jur.

A. basilaris, Say.

I have taken this myself, not rarely.

LABIDIA, Prov.

L. originalis, Norton.

SIOBLA, Cam.

S. excavata, Norton.

MACROPHYA, Dahlb.

M. albomaculata, Norton.

M. epinota, Say.

M. externa, Say.

Taken by Mr. Crane, at Caldwell.

M. flavicoxæ, Norton.

New Jersey specimens are in Mr. Cresson's collection.

M. formosa, Klug.

New Jersey specimens are in Mr. Cresson's collection.

M. fuliginea, Norton.

M. goniphora, Say.

M. incerta, Norton.

Mr. Cresson has specimens from all surrounding States, and the species is almost certain to occur here.

M. intermedia, Norton.

M. nigra, Norton.

M. pannosa, Say.

M. pulchella, Klug.

Mr. Cresson has specimens from all surrounding States.

M. tibiator, Norton.

New Jersey specimens are in Mr. Cresson's collection.

M. trisyllaba, Norton.

New Jersey specimens are in Mr. Cresson's collection.

M. trosula, Norton.

M. varia, Norton.

PACHYPROTASIS, Hartig.

P. omega, Norton.

TAXONUS, Hartig.

T. albidopictus, Norton.

T. dubitatus, Norton.

T. multicolor, Norton.

T. nigrisoma, Norton.

T. uncinatus, Norton.

STRONGYLOGASTER, Dahlb.

S. apicalis, Say.

S. epicera, Say.

S. mellosus, Norton.

S. pallidicornis, Norton.

S. pallipes, Say.

S. pinguis, Norton.

S. rufocinctus, Norton.

S. tacitus, Say.

S. terminalis, Say.

TENTHREDO, Linn.

T. angulata, Norton.

T. angulifera, Norton.

T. eximia, Norton.

T. flavomarginis, Norton.

T. grandis, Norton.

T. lineata, Prov.

T. lobata, Norton.

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T. mellina, Norton.

T. ruficolor, Norton.

T. rufipes, Say.

T. rufopectus, Norton.

Taken at Caldwell by Mr. Crane; also in Mr. Cresson's collection from the State.

T. rufopediba, Norton.

T. signata, Norton.

T. tricolor, Norton.

T. verticalis, Say.

TENTHREDOPSIS, Costa.

T. atrovioleacea, Norton.

Mr. Cresson has specimens from New Jersey.

T. confusa, Norton.

T. semilutea, Norton.

New Jersey specimens are in Mr. Cresson's collection.

Sub-Family LYDINÆ.

LOPHYRUS, Latr.

L. abbotii, Leach.

L. akhurstii, Norton.

Recorded from New Jersey only.

L. lecontei, Fitch.

LYDA, Fabr.

L. apicalis, Westw.

L. discolor, Cress.

L. excavata, Norton.

L. fasciata, Norton.

L. inconspicua, Norton.

L. luteicornis, Norton.

L. maculiventris, Norton.

- L. ocreata*, Say.
L. pallimacula, Norton.
L. plagiata, Klug.
L. tessellata, Klug.
-

Sub-Family **XYELINÆ.****XYELA**, Dalm.

- X. minor*, Norton.
-

Family **URO CERIDÆ.****CEPHUS**, Latr.

- C. abbreviatus*, Say.
C. integer, Norton.
C. trimaculatus, Say.

ORYSSUS, Latr.

- O. sayi*, Westw.
O. terminalis, Newn.

XIPHYDRIA, Latr.

- X. abdominalis*, Say.
X. albicornis, Harris.
X. attenuata, Norton.

New Jersey specimens are in Mr. Cresson's collection.

- X. tibialis*, Say.

URO CERUS, Geoff.

- U. abdominalis*, Harr.
U. albicornis, Fabr.
U. cressoni, Norton.

New Jersey specimens are in Mr. Cresson's collection.

- U. cyaneus*, Fabr.
U. edwardsii, Brullé.
U. flavicornis, Fabr.
U. nigricornis, Fabr.

New Jersey specimens are in Mr. Cresson's collection.

TREMEX, Jur.

T. columba, Linn.

Reported as injuring pear trees during the summer of 1889.
I have taken it at Greenville and at New Brunswick. It occurs
all over the State. Common at Caldwell—Crane.

Family CYNIPIDÆ.

Sub-Family IBALIINÆ.

IBALIA, Latr.

I. ensiger, Norton.

I. maculipennis, Hald.

Sub-Family CYNIPINÆ.

RHODITES, Hartig.

R. bicolor, Harr.

R. dichlocerus, Harr.

Taken at Caldwell by Mr. Crane.

R. ignota, O. S.

R. radicum, O. S.

R. rosæ, Linn.

R. verna, O. S.

DIASTROPHUS, Hartig.

D. nebulosus, O. S.

D. radicum, Bass.

D. similis, Bass.

AMPHIBOLIPS, Reinh.

A. ilicifoliæ, Bass.

A. inanis, O. S.

A. spongifica, O. S.

Taken at Caldwell by Mr. Crane.

ANDRIOUS, Hartig.

- A. clavula**, Bass.
A. cornigera, O. S.
A. seminator, Harris.
A. chinquapin, Fitch.
A. fusiformis, O. S.
A. tubicola, O. S.

CYNIPS, Linn.

- C. batatus**, Fitch.

BIORHIZA, Westw.

- B. nigra**, Fitch.

LOXAULUS, Mayr.

- L. mammula**, Bass.

HOLCASPIS, Mayr.

- H. globulus**, Fitch.
H. rugosa, Bass.

DRYOPHANTA, Först.

- D. polita**, Bass.

Recorded from New Jersey.

- D. papula**, Bass.
D. ignota, Bass.

NEUROTERUS, Hartig.

- N. majalis**, Bass.
N. saltatorius, H. Edw.

Sub-Family INQUILINÆ.**PERICLISTUS, Först.**

- P. sylvestris**, O. S.

CEROPTRES, Hartig.

- C. petiolicola**, O. S.
C. tuber, Fitch.

SYNERGUS, Hartig.

S. campanula, O. S.

S. dimorphus, O. S.

S. læviventris, O. S.

S. lana, Fitch.

S. lignicola, O. S.

S. oneratus, Harris.

Sub-Family ALLOTRIINÆ.

ALLOTRIA, Westw.

A. avenæ, Fitch.

A. tritici, Fitch.

Sub-Family FIGITINÆ.

EUCOILA, Westw.

E. pedata, Say.

FIGITES, Latr.

F. impatiens, Say.

Family EVANIIDÆ.

AULACUS, Jur.

A. fasciatus, Say.

A. stigmaterus, Cress.

Recorded from New Jersey.

FCENUS, Fabr.

F. tarsatorius, Say.

EVANIA, Fabr.

E. appendigaster, Linn.

HYPTIA, Illig.

H. reticulatum, Say.

Caldwell—Crane.

Family ICHNEUMONIDÆ.**Sub-Family ICHNEUMONINÆ.****ICHNEUMON, Linn.**

- I. acerbus*, Cress.
- I. agnitus*, Cress.
- I. annulatus*, Prov.
- I. annulipes*, Cress.
- I. apertus*, Cress.
- I. ater*, Cress.
- I. azotus*, Cress.
- I. brevicinctor*, Say.
- I. brevipennis*, Cress.
- I. bronteus*, Cress.
- I. cœruleus*, Cress.

New Jersey specimens are in Mr. Cresson's collection.

- I. centrator*, Say.

I have taken this myself within New Jersey.

- I. cincticornis*, Cress.
- I. citrifrons*, Cress.
- I. comes*, Cress.
- I. comptus*, Say.

Taken at Caldwell by Mr. Crane.

- I. confirmatus*, Cress.
- I. consignatus*, Cress.
- I. creperus*, Cress.
- I. devinctor*, Say.
- I. duplicatus*, Say.

I have taken this myself in the State.

- I. extrematatis*, Cress.
- I. feralis*, Cress.
- I. finitimus*, Cress.
- I. flavicornis*, Cress.

I have taken this myself in the State.

- I. flavizonatus*, Cress.

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I. funestus, Cress.

I. fuscifrons, Cress.

I. galenus, Cress.

New Jersey specimens are in Mr. Cresson's collection.

I. germanus, Cress.

I. grandis, Brullé.

I. helvipes, Cress.

I. insolens, Cress.

I. instabilis, Cress.

Specimens from New Jersey are in Mr. Cresson's collection.

I. jejunos, Cress.

I. jucundus, Brullé.

I. lætus, Brullé.

New Jersey specimens are in Mr. Cresson's collection.

I. leucaniæ, Fitch.

I. leviculus, Cress.

I. lewisii, Cress.

I. libens, Cress.

New Jersey specimens are in Mr. Cresson's collection.

I. longulus, Cress.

I. maius, Cress.

I. malacus, Say.

Mr. Cresson has this from New Jersey.

I. merus, Cress.

I. milvus, Cress.

I. mimicus, Cress.

I. mucronatus, Prov.

I. munificus, Cress.

I. nanus, Cress.

New Jersey specimens are in Mr. Cresson's collection.

I. navus, Say.

I. nigratorius, Fabr.

I. orpheus, Cress.

I. otiosus, Say.

New Jersey specimens are in Mr. Cresson's collection.

I. paratus, Say.

I. parvus, Cress.

I. pepticus, Cress.

Recorded from New Jersey and specimens are in Mr. Cresson's collection.

I. pomilius, Prov.

I. pulcher, Brullé.

I. residuus, Say.

I. rubicundus, Cress.

I. rufiventris, Brullé.

Specimens from New Jersey are in Mr. Cresson's collection.

I. saucius, Cress.

I. scitulus, Cress.

I. seminiger, Cress.

New Jersey specimens are in Mr. Cresson's collection.

I. signatipes, Cress.

I. sorrow, Cress.

I. subcyaneus, Cress.

Taken at Caldwell by Mr. Crane.

I. subdolus, Cress.

I. sublatus, Cress.

I. succinctus, Brullé.

Common at Caldwell. I have taken or seen it everywhere in the State.

I. trogiformis, Cress.

New Jersey specimens are in Mr. Cresson's collection.

I. unifasciatus, Say.

Taken at Caldwell by Mr. Crane.

I. utilis, Cress.

I. variegatus, Cress.

I. velox, Cress.

Mr. Cresson has it from New Jersey.

I. versabilis, Cress.

22 GEOLOGICAL SURVEY OF NEW JERSEY.

- I. *vescus*, Prov.
- I. *viola*, Cress.
- I. *volens*, Cress.
- I. *w-album*, Cress.
- I. *wilsoni*, Cress.
- I. *zebratus*, Cress.

HOPLISMENUS, Grav.

- H. *morulus*, Say.
New Jersey specimens are in Mr. Cresson's collection.

AMBLYTELES, Weism.

- A. *anceps*, Cress.
- A. *detritus*, Brullé.
Specimens from New Jersey are in Mr. Cresson's collection.
- A. *excultus*, Cress.
New Jersey specimens are in Mr. Cresson's collection.
- A. *fraternus*, Cress.
- A. *improvisus*, Cress.
Recorded from New Jersey, and specimens in Mr. Cresson's collection.
- A. *indistinctus*, Prov.
- A. *luctus*, Cress.
- A. *nubivagus*, Cress.
- A. *ormenus*, Cress.
- A. *rufizonatus*, Cress.
Recorded from New Jersey, and specimen in Mr. Cresson's collection.
- A. *semicæruleus*, Cress.
- A. *subrufus*, Cress.
- A. *suturalis*, Say.
Taken at Caldwell by Mr. Crane. New Jersey specimens are also in Mr. Cresson's collection.
- A. *ultus*, Cress.

TROGUS, Grav.

T. brullei, Cress.

T. copei, Cress.

T. exesorius, Brullé.

Taken by me in New Jersey. Common near Caldwell—
Crane.

T. nubilipennis, Hald.

T. obsidianator, Brullé.

I have taken this in New Jersey near Montclair.

PLATYLABUS, Wesm.

P. thoracicus, Cress.

EURLABUS, Wesm.

E. agilis, Cress.

PLÆOGENES, Wesm.

P. fungor, Norton.

P. hebe, Cress.

P. hebrus, Cress.

P. helvolus, Cress.

CENTETERUS, Wesm.

C. tuberculifrons, Prov.

COLPOGNATHUS, Wesm.

C. helvus, Cress.

Sub-Family CRYPTINÆ.**STILPNUS, Grav.**

S. americanus, Cress.

PHYGADEUON, Grav.

P. vulgaris, Cress.

CRYPTUS, Fabr.

- C. alacris**, Cress.
- C. americanus**, Cress.
- C. contiguus**, Cress.
- C. extrematis**, Cress.
- C. limatus**, Cress.
- C. nuncius**, Say.
- C. persimilis**, Cress.
- C. semirufus**, Brullé.
- C. subclavatus**, Say.

MESOSTENUS, Grav.

- M. albomaculatus**, Cress.
- M. americanus**, Cress.
- M. thoracicus**, Cress.

HEMITELES, Grav.

- H. nemativorus**, Walsh.
- H. tenellus**, Say.
- H. utilis**, Norton.

APTESIS, Först.

- A. micropterus**, Say.

PEZOMACHUS, Grav.

- P. dimidiatus**, Cress.
- P. gentilis**, Cress.
- P. gracilis**, Cress.
- P. macer**, Cress.
- P. obscurus**, Cress.

Recorded from New Jersey only.

- P. unicolor**, Cress.

Sub-Family OPHIONINÆ.

OPHION, Fabr.

O. bifoveolatum, Brullé.

O. bilineatum, Say.

Not common at Caldwell—Crane. Specimens are in Cresson's collection from New Jersey.

O. glabratum, Say.

O. macrurum, Linn.

I have taken this in New Jersey myself. Common at Caldwell—Crane.

O. purgatum, Say.

I have taken this in New Jersey.

THYREODON, Brullé.

T. morio, Fabr.

NOTOTRACHYS, Marsh.

N. ejuncidus, Say.

EXOCHILUM, Wesm.

E. fuscipenne, Norton.

I have taken this not uncommonly in the State.

E. mundum, Say.

Common at Caldwell—Crane.

HETEROPELMA, Wesm.

H. flavicornis, Brullé.

I have taken this in the State.

H. datanæ, Riley.

ANOMALON, Grav.

A. anale, Say.

A. curtum, Norton.

A. laterale, Brullé.

A. metallicum, Norton.

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- A. nigratum, Norton.
- A. nigrorufum, Norton.
- A. prismaticum, Norton.
- A. relictum, Fabr.
- A. semirufum, Norton.

OPHELTES, Holmgr.

- O. glaucopterus, Linn.

PANISCUS, Grav.

- P. geminatus, Say.
Common at Caldwell—Crane.

CAMPOPLEX, Grav.

- C. alius, Norton.
- C. argenteus, Norton.
- C. diversus, Norton.

LIMNERIA, Holm.

- L. compressa, Cresson.
- L. distincta, Cress.
Recorded from New Jersey only.
- L. dubitata, Cress.
- L. flaviricta, Cress.
- L. fugitiva, Say.
- L. major, Cress.
- L. obscura, Cress.
- L. oxylus, Cress.
- L. subrubida, Cress.
Recorded from New Jersey.
- L. tibiator, Cress.
Recorded from New Jersey.
- L. valida, Cress.
- L. vicina, Cress.
Recorded from New Jersey.

MESOCHORUS, Grav.

M. americanus, Cress.

M. luteipes, Cress.

Recorded in the United States from New Jersey only.

M. melleus, Cress.

M. obliquus, Cress.

M. scitulus, Cress.

THERSILOCHUS, Holmgr.

T. conotracheli, Riley.

EXETASTES, Grav.

E. scutellaris, Cress.

CERATOSOMA, Cress.

C. fasciata, Cress.

Sub-Family TRYPHONINÆ.**MESOLEPTUS, Grav.**

M. bicolor, Cress.

M. concolor, Cress.

Recorded in the United States from New Jersey only.

M. cultus, Cress.

Recorded from New Jersey only.

M. decens, Cress.

M. discolor, Cress.

M. flavifrons, Cress.

Recorded from New Jersey only.

M. fucatus, Cress.

M. honestus, Cress.

Recorded from New Jersey.

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M. peregrinus, Cress.

Recorded from New Jersey.

M. propinquus, Cress.

M. sedulus, Cress.

Recorded from New Jersey.

M. unicolor, Cress.

MESOLEIUS, Holmgr.

M. submarginatus, Cress.

TRYPHON, Grav.

T. affinis, Cress.

Recorded from New Jersey.

T. americanus, Cress.

T. analis, Cress.

T. capitatus, Cress.

T. communis, Cress.

T. pleuralis, Cress.

Recorded from New Jersey only.

GRYPOCENTRUS, Ruthe.

G. nasutus, Cress.

EUCEROS, Grav.

E. flavescens, Cress.

POLYBLASTUS, Hartig.

P. subcrassus, Cress.

ERROMENUS, Holmgr.

E. crassus, Cress.

Recorded from New Jersey.

E. dimidiatus, Cress.

Recorded from New Jersey.

CTENISCUS, Hal.

C. flavicoxæ, Cress.

C. orbitalis, Cress.

EXYSTON, Schiödt.

E. clavatus, Cress.

EXOCHOIDES, Cress.

E. trifasciata, Cress.

EXOCHUS, Grav.

E. dorsalis, Cress.

Recorded from New Jersey only.

E. fulvipes, Cress.

E. propinquus, Cress.

E. semirufus, Cress.

BASSUS, Grav.

B. agilis, Cress.

B. frontalis, Cress.

B. sycophanta, Walsh.

METOPHIUS, Grav.

M. pollinatorius, Say.

Sub-Family PIMPLINÆ.

AROTES, Grav.

A. amœnus, Cress.

A. decorus, Say.

A. venustus, Cress.

RHYSSA, Grav.

R. albomaculata, Cr.

Mr. Cresson's collection contains New Jersey specimens.

R. persuasoria, Linn.

THALESSA, Holmgr.

T. atrata, Fabr.

Common throughout the State. Caldwell—Crane.

T. lunator, Fabr.

Less common, but equally wide-spread.

T. nitida, Cress.

Has been taken on the Palisades near Fort Lee.

T. nortonii, Cress.

Rare at Caldwell—Crane.

EPHIALTES, Grav.

E. albipes, Cress.

Recorded from New Jersey.

E. irritator, Fabr.

E. rex, Kriech.

E. tuberculatus, Fourc.

THERONIA, Holmgr.

T. melanocephala, Brullé.

PIMPLA, Fabr.

P. alboricta, Cress.

P. annulicornis, Cress.

P. annulipes, Brullé.

I have taken this in New Jersey. Caldwell—Crane.

P. conquisitor, Say.

I have taken this in New Jersey.

P. indagatrix, Walsh.

P. inquisitor, Say.

I have seen this from the State. Not common at Caldwell—Crane.

P. notanda, Cress.

Recorded from the State. Specimens with Mr. Cresson.

P. pedalis, Cress.

Rare at Caldwell—Crane.

P. picticornis, Cress.

Recorded from the State. Specimens in Collection Cresson.

P. rufopectus, Cress.

P. rufovariata, Cress.

Recorded from the State. Specimens with Mr. Cresson.

P. scriptifrons, Cress.

P. tenuicornis, Cress.

Specimens from New Jersey are in Mr. Cresson's collection.

P. pterelas, Say.

Specimens from New Jersey are in Mr. Cresson's collection.

POLYSPHINCTA, Grav.

P. limata, Cress.

Recorded from New Jersey.

GLYPTA, Grav.

G. animosa, Cress.

G. erratica, Cress.

G. rufiscutellaris, Cress.

New Jersey specimens are in Mr. Cresson's collection.

G. scitula, Cress.

Recorded from New Jersey only. Specimen in Mr. Cresson's collection.

G. simplicipes, Cress.

G. vulgaris, Cress.

Specimens from New Jersey are in the Cresson collection.

ARENETRA, Holmgr.

A. nigrita, Walsh.

A. ventralis, Cress.

OYLLOERIA, Schiödt.

O. occidentalis, Cress.

LAMPRONOTA, Curtis.

L. agilis, Cress.

L. americana, Cress.

L. insita, Cress.

Recorded from New Jersey. Specimens with Mr. Cresson.

L. occidentalis, Cress.

L. parva, Cress.

L. pleuralis, Cress.

L. pulchella, Cress.

Recorded from New Jersey only. Specimens with Mr. Cresson.

L. punctulata, Cress.

L. rubrica, Cress.

New Jersey specimens are in the Cresson collection.

L. tegularis, Cress.

L. varia, Cress.

MENISCUS, Schiödte.

M. elegans, Cress.

M. mirabilis, Cress.

M. scutellaris, Cress.

PHYTODIETUS, Grav.

P. distinctus, Cress.

P. vulgaris, Cress.

EUXORIDES, Cress.

E. americanus, Cress.

XYLONOMUS, Grav.

X. albopictus, Cress.

X. stigmatopterus, Say.

ODONTOMERUS, Grav.

O. bicolor, Cress.

O. mellipes, Say.

New Jersey specimens are in Collection Cresson.

L. grallator, Say. **LABENA**, Cress.

G. anguina, Cress. **GROTEA**, Cress.

Family STEPHANIDÆ.

MEGISCHUS, Brullé.
M. rufipes, Say.

Family BRACONIDÆ.

Sub-Family BRACONINÆ.

BRACON, Fabr.
B. dichrous, Brullé.
B. erythrogaster, Brullé.
B. eurygaster, Brullé.
B. ligator, Say.
B. pectinator, Say.
B. simplex, Cress.

Sub-Family HECABOLINÆ.

HECABOLUS, Curtis
H. lycti, Cress.
H. minimus, Cress.
H. utilis, Cress.

Sub-Family RHOGADINÆ.

RHOGAS, Nees.
R. abdominalis, Cress.

New Jersey specimens are in the Cresson collection.

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R. aciculatus, Cress.

New Jersey specimens are in the Cresson collection.

R. burrus, Cress.

R. intermedius, Cress.

New Jersey specimens are in the Cresson collection.

R. lectus, Cress.

New Jersey specimens are in the Cresson collection.

R. terminalis, Cress.

Taken at Caldwell—Crane.

Sub-Family SIGALPHINÆ.

SIGALPHUS, Latr.

S. curculionis, Fitch.

Sub-Family CHELONINÆ.

PHANEROTOMA, Wesm.

P. tibialis, Hald.

CHELONUS, Jur.

C. basilaris, Say.

C. lunatus, Hald.

C. sericeus, Say.

C. sobrinus, Hald.

SPHÆROPYX, Hal.

S. bicolor, Cress.

Sub-Family MICROGASTERINÆ.

APANTELES, Forst.

A. acronyctæ, Riley.

I have bred this species during the present (1889) season.

A. carpatus, Say.

A. congregatus, Say.

Occurs in New Jersey quite commonly.

A. limenitidis, Riley.

MICROPLITIS, Först.

M. gortynæ, Riley.

MICROGASTER, Latr.

M. oleracea, Taylor.

Sub-Family AGATHIDINÆ.

AGATHIS, Latr.

A. hæmatodes, Brullé.

New Jersey specimens are in the Cresson collection.

A. liberator, Brullé.

A. semirubra, Brullé.

New Jersey specimens are in the Cresson collection.

A. vulgaris, Cress.

Caldwell—Crane.

EARINUS, Wesm.

E. limitaris, Say.

MICRODUS, Nees.

M. annulipes, Cress.

M. earinoides, Cress.

M. imitatus, Cress.

Specimens from New Jersey are with Mr. Cresson.

M. simillimus, Cress.

New Jersey specimens are in the Cresson collection.

Sub-Family EUPHORINÆ.

EUPHORUS, Nees.

E. mellipes, Cress.

Recorded from New Jersey. Specimens in the Cresson collection.

Sub-Family METEORINÆ.

METEORUS, Hal.

M. communis, Cress.

Recorded from New Jersey. Specimens with Mr. Cresson.

M. dimidiatus, Cress.

New Jersey specimens are in Mr. Cresson's collection.

M. pallitarsis, Cress.

Recorded from New Jersey only. Specimens with Mr. Cresson.

M. vulgaris, Cress.

Specimens from New Jersey are in the Cresson collection.

Sub-Family CALYPTINÆ.

EUBADIZON, Nees.

E. americanus, Cress.

Recorded from New Jersey.

CALYPTUS, Hal.

O. major, Cress.

O. tibiator, Cress.

Recorded from New Jersey only. Specimens with Mr. Cresson.

Sub-Family TOXONEURINÆ.

TOXONEURA, Say.

T. populator, Say.

T. tibiator, Say.

Sub-Family HELCONINÆ.

HELCON, Nees.

H. dentipes, Brullé.

GYMNOSCELUS, Först.

G. americanus, Cress.

Sub-Family MACROCENTRINÆ.**MACROCENTRUS, Curtis.**

M. *delicatus*, Cress.

Sub-Family APHIDIINÆ.**PRAON, Hal.**

P. *avenaphis*, Fitch.

P. *polygonaphis*, Fitch.

P. *viburnaphis*, Fitch.

TOXARES, Westw.

T. *triticaphis*, Fitch.

TRIOXYS, Hal.

T. *cerasaphis*, Fitch.

T. *populaphis*, Fitch.

T. *salicaphis*, Fitch.

APHIDIUS, Nees.

A. *lactucaphis*, Fitch.

Family CHALCIDIDÆ.**Sub-Family LEUCOSPIDINÆ.****LEUCOSPIS, Fabr.**

L. *affinis*, Say.

Caldwell—Crane. Specimens in the Cresson collection, from
New Jersey.

L. *integra*, Hald.

L. *shuckardi*, Westw.

Sub-Family CHALCIDINÆ.**SMICRA, Spin.**

S. *bracata*, Sanb.

Caldwell, rare—Crane.

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S. igneoides, Kirby.

S. maculata, Fabr.

S. mariæ, Riley.

S. microgaster, Say.

S. nigrifex, Wlk.

S. tourina, Cress.

CHALCIS, Fabr.

C. flavipes, Fabr.

New Jersey specimens are in Collection Cresson.

PHASGONOPHORA, Westw.

P. sulcata, Westw.

Sub-Family PERILAMPINÆ.

PERILAMPUS, Latr.

P. hyalinus, Say.

Caldwell, common—Crane.

P. triangularis, Say.

P. violaceus, Dalm.

Sub-Family EURYTOMINÆ.

EURYTOMA, Illig.

E. diastrophii, Walsh.

E. lanulæ, Fitch.

E. studiosa, Say.

DECATOMA, Spin.

D. hyalipennis, Walsh.

D. varians, Walsh.

ISOSOMA, Walk.

I. hordei, Harr.

I. tritici, Riley.

I. vitis, Saund.

Sub-Family TORYMINÆ.**DIOMORUS, Wlk.**

D. zabriskii, Cress.

TORYMUS, Dalm.

T. æa, Wlk.

T. chrysochlora, O. S.

T. harrisii, Fitch.

T. tubicola, O. S.

Sub-Family EUPELMINÆ.**EUPELMUS, Dalm.**

E. allynii, French.

Sub-Family ENCYRTINÆ.**RHOPUS, Först.**

R. coccois, Smith.

APHYCUS, Mayr.

A. brunneus, Howard.

Recorded from New Jersey only.

ENCYRTUS, Dalm.

E. bucculatricis, Howard.

E. turni, Pack.

COPIDOSOMA, Ratz.

C. gelechiæ, Howard.

C. intermedium, Howard.

Recorded from New Jersey.

C. truncatellum, Dalm.

CHILONEURUS, Westw.

C. albicornis, Howard.

Sub-Family APHELININÆ.

COCOPHAGUS, Westw.

C. ater, Howard.

C. lecanii, Fitch.

APHELINUS, Dalm.

A. mali, Hald.

A. mytilaspidis, Le B.

Sub-Family PIRENINÆ.

MACROGLENES, Westw.

M. querci-globuli, Fitch.

M. querci-pisi, Fitch.

Sub-Family TRIDYMINÆ.

SEMIOTELLUS, Westw.

S. chalcidephagus, Walsh.

S. clisiocampæ, Fitch.

Sub-Family SPALANGINÆ.

SPALANGIA, Latr.

S. querci-lanæ, Fitch.

Sub-Family PTEROMALINÆ.

MERISUS, Wlk.

M. destructor, Say.

PTEROMALUS, Swed.

P. gelechiæ, Webst.

P. onerati, Fitch.

- P. puparum*, Linn.
P. querci-pilulæ, Fitch.
P. tabacum, Fitch.
-

Sub-Family ELACHISTINÆ.

EUPLECTRUS, Westw.

- E. catocalæ*, Howard.
E. comstockii, Howard.
E. plathypenæ, Howard.
-

Sub-Family EULOPHINÆ.

EULOPHUS, Geoff.

- E. theclæ*, Pack.
-

Sub-Family TRICHOGRAMMINÆ.

TRICHOGRAMMA, Westw.

- T. fraterna*, Fitch.
T. odontotæ, Howard.
T. orgyiæ, Fitch.
T. pretiosa, Riley.
-

Family PROCTOTRUPIDÆ.

Sub-Family BETHYLINÆ.

SOLEROCHROA, Först.

- S. thoracica*, Westw.
-

Sub-Family CERAPHRONINÆ.

CERAPHRON, Jur.

- C. triticum*, Taylor.

Sub-Family SCELIONINÆ.

TELENOMUS, Hal.

T. bifidus, Riley.

T. orgyiæ, Fitch.

Sub-Family PLATYGASTRINÆ.

PLATYGASTER, Latr.

P. error, Fitch.

Sub-Family MYMARINÆ.

AMITUS, Hald.

A. aleurodinus, Hald.

ERETMOCERUS, Hald.

E. corni, Hald.

Sub-Family DIAPRINÆ.

COPTERA, Say.

C. polita, Say.

DIAPRIA, Latr.

D. apicalis, Say.

Family PELECINIDÆ.

PELECINUS, Latr.

P. polyturator, Dru.

Caldwell, common—Crane. Occurs throughout New Jersey quite commonly.

Family CHRYSIDIDÆ.**Sub-Family ELAMPINÆ.****OMALUS, Panz.**

- O. coruscans*, Norton.
- O. iridescent*, Norton.
- O. læviventris*, Cress.
- O. sinuosus*, Say.

NOTOZUS, Först.

- N. marginatus*, Patton.
- N. viridicyaneus*, Norton.

HEDYCHRIDIMUM, Perrin.

- H. dimidiatum*, Say.
- H. viride*, Cress.

HEDYCHRUM, Latr.

- H. obsoletum*, Say.
 - H. violaceum*, Brullé.
-

Sub-Family CHRYSIDINÆ.**CHRYISIS, Linn.**

- C. cœruleans*, Fabr.

New Jersey specimens are with Mr. Cresson.

- C. frey-gessneri*, Grib.
- C. hilaris*, Dahlb.
- C. inæquidens*, Dahlb.
- C. intricata*, Brullé.
- C. nitidula*, Fabr.
- C. nortoni*, Aaron.
- C. parvula*, Fabr.

Not common at Caldwell—Crane.

- C. smaragdula*, Fabr.
- C. tota*, Aaron.
- C. verticalis*, Patton.

Family FORMICIDÆ.

CAMPONOTUS, Mayr.

- C. atriceps*, Smith.
- C. castaneus*, Latr.
Caldwell—Crane.
- C. esuriens*, Smith.
Caldwell—Crane.
- C. herculaneus*, Smith.
Caldwell—Crane.
- C. lateralis*, Latr.
- C. marginatus*, Latr.
Caldwell—Crane.
- C. pubescens*, Fabr.
- C. sylvaticus*, Oliv.

POLYERGUS, Latr.

- P. lucidus*, Mayr.

FORMICA, Linn.

- F. exsectoides*, Forel.
- F. fusca*, Linn.
Caldwell—Crane.
- F. gnava*, Buck.
- F. gracilis*, Buck.
- F. integra*, Nyl.
Caldwell—Crane. Also in Cresson collection.
- F. occidentalis*, Buck.
- F. pallidefulva*, Latr.
Recorded from New Jersey.
- F. pratensis*, De G.
- F. rufa*, Linn.
Caldwell, common—Crane. I have seen this not uncommon throughout the State.
- F. sanguinea*, Latr.
New Jersey specimens are in the Cresson collection.

- F. schaufussi*, Mayr.
Caldwell, common—Crane.
- F. truncicola*, Nyl.

LASIVS, Fabr.

- L. brunneus*, Latr.
- L. claviger*, Roger.
Caldwell—Crane.
- L. flavus*, De G.
Caldwell—Crane.
- L. interjectus*, Mayr.
Caldwell—Crane.
- L. niger*, Linn.
Caldwell, common—Crane.
- L. umbratus*, Nyl.
Caldwell, common—Crane.

BRACHYMYRMEX, Mayr.

- B. heeri*, Forel.

PRENOLEPIS, Mayr.

- P. nitens*, Mayr.
Caldwell—Crane.
- P. vividula*, Nyl.

DORYMYRMEX, Mayr.

- D. pyramicus*, Roger.

TAPINOMA, Först.

- T. sessile*, Say.
Caldwell, common—Crane.

DOLICHODERUS, Lund.

- D. mariæ*, Forel.
Recorded from New Jersey.
- D. postulatus*, Mayr.
Recorded from New Jersey.

Family PONERIDÆ.

PONERA, Latr.

P. contracta, Latr.

P. gilva, Roger.

P. pennsylvanica, Buck.

DISCOTHYREA, Roger.

D. testacea, Roger.

AMBLYOPONE, Erich.

A. pallipes, Hald.

Family MYRMICIDÆ.

ATTA, Fabr.

A. tardigrada, Buck.

Recorded from New Jersey.

APHÆNOGASTER, Mayr.

A. fulva, Roger.

Caldwell—Crane.

A. pennsylvanica, Buck.

A. treatæ, Forel.

Recorded from New Jersey. Specimen with Mr. Cresson.

POGONOMYRMEX, Mayr.

P. transversus, Mayr.

Caldwell—Crane. Heretofore only recorded from Florida and Georgia.

MYRMICA, Latr.

M. dimidiata, Say.

M. lævinodis, Nyl.

M. opposita, Say.

M. punctiventris, Roger.

Recorded from New Jersey.

M. scabrinodis, Nyl.

Caldwell—Crane.

M. sulcinodis, Nyl.

Recorded from New Jersey.

TETRAMORIUM, Mayr.

T. cæspitum, Linn.

STENAMMA, Westw.

S. neoarcticum, Mayr.

MYRMECINA, Curtis.

M. latreillii, Curtis.

MONOMORIUM, Mayr.

M. minutum, Mayr.

M. molesta, Say.

M. pharaonis, Linn.

PHEIDOLE, Westw.

P. morrissi, Forel.

P. pennsylvanica, Roger.

P. vinelandica, Forel.

Recorded from New Jersey.

SOLENOPSIS, Westw.

S. debilis, Mayr.

Recorded from New Jersey.

S. fugax, Latr.

Caldwell—Crane.

S. madara, Roger.

S. sulfurea, Roger.

CREMASTOGASTER, Lund.

C. læviuscula, Mayr.

C. lineolata, Say.

Caldwell—Crane.

C. scutellaris, Oliv.

Family MUTILLIDÆ.

MUTILLA, Linn.

- M. bifasciata*, Swed.
- M. dubitata*, Smith.
Westville—Cresson.
- M. hexagona*, Say.
- M. ornativentris*, Cress.
Westville—Cresson.
- M. rufa*, St. Farg.
- M. scrupea*, Say.
- M. thoracica*, Blake.

SPHÆROPTHALMA, Blake.

- S. balteola*, Blake.
- S. canadensis*, Blake.
Westville—Cresson.
- S. cypria*, Blake.
Westville—Cresson.
- S. fenestrata*, St. Farg.
- S. ferrugata*, Fabr.
Caldwell, rare—Crane. Westville—Cresson.
- S. macra*, Cress.
New Jersey specimens are in the Cresson collection. It has
heretofore been recorded from Texas only.
- S. mutata*, Blake.
Westville—Cresson.
- S. occidentalis*, Linn.
Westville—Cresson.
- S. pennsylvanica*, St. Farg.
- S. scævola*, Blake.
Caldwell, common—Crane. Westville—Cresson.
- S. simillima*, Smith.
Caldwell, common—Crane.

MYRMOSA, Latr.

- M. unicolor*, Say.

Family SCOLIIDÆ.

TIPHIA, Fabr.

T. inornata, Say.

Caldwell, common—Crane. New Brunswick ; not common.

MYZINE, Latr.

M. ephippium, Fabr.

M. hæmorrhoidalis, Fabr.

M. interrupta, Say.

Westville—Cresson.

M. marginata, Say.

M. obscura, Fabr.

Westville—Cresson.

M. sexcincta, Fabr.

I have taken this commonly in New Jersey.

SCOLIA, Fabr.

S. bicincta, Fabr.

Westville—Cresson.

S. dubia, Say.

Westville—Cresson.

S. nobilitata, Fabr.

ELIS, Fabr.

E. plumipes, Dru.

Caldwell—Crane.

E. quadrinotata, Fabr.

New Jersey specimens are in Mr. Cresson's collection.

E. trifasciata, Fabr.

Family POMPILIDÆ.

POMPILUS, Fabr.

P. æthiops, Cress.

Caldwell, not common—Crane.

P. americanus, Beauv.

Caldwell, rare—Crane.

P. atramentarius, Dahlb.

P. atrox, Dahlb.

Caldwell, not common—Crane.

P. biguttatus, Fabr.

New Jersey specimens are in the Cresson collection.

P. bipartitus, St. Farg.

P. brevicornis, Cress.

P. cylindricus, Cress.

P. ephippiger, Smith.

P. ferrugineus, Say.

P. funereus, St. Farg.

P. humilis, Cress.

P. ingenuus, Cress.

P. interruptus, Cress.

P. marginatus, Say.

New Jersey specimens are in the Cresson collection.

P. maurus, Cress.

P. philadelphicus, St. Farg.

P. scelestus, Cress.

P. subviolaceus, Cress.

P. tenebrosus, Cress.

P. tropicus, Linn.

New Jersey specimens are in the Cresson collection.

P. virginiensis, Cress.

PRIOONEMIS, Schiödt.

P. alienatus, Smith.

New Jersey specimens are in the Cresson collection.

P. conicus, Say.

P. fortis, Cress.

P. fulvicornis, Cress.

P. germanus, Cress.

P. maculipennis, Smith.

P. nebulosus, Dahlb.

P. pompilius, Cress.

Recorded from New Jersey. Specimens in Collection Cresson.

P. subopacus, Cress.

P. unifasciatus, Say.

AGENIA, Schiödte.

A. architecta, Say.

A. bombycina, Cress.

Caldwell—Crane.

A. calcarata, Cress.

A. iridipennis, Cress.

Recorded from New Jersey.

A. mellipes, Say.

A. pulchripennis, Cress.

PLANIOEPS, Latr.

P. niger, Cress.

CEROPALES, Latr.

C. bipunctata, Say.

Caldwell, rare—Crane.

C. fraterna, Smith.

C. longipes, Smith.

PEPSIS, Fabr.

P. elegans, St. Farg.

Family SPHECIDÆ.

AMMOPHILA, Kirby.

A. arvensis, St. Farg.

A. conditor, Smith.

A. gracilis, St. Farg.

Caldwell, rare—Crane.

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A. gryphus, Smith.

Caldwell, common—Crane.

A. intercepta, St. Farg.

Westville—Cresson.

A. procera, Klug.

A. urnaria, Klug.

Caldwell, not common—Crane.

A. violaceipennis, St. Farg.

PELOPÆUS, Latr.

P. cementarius, Dru.

Caldwell, common—Crane. Westville—Cresson.

CHALYBION, Dahlb.

O. cæruleum, Linn.

CHLORION, Latr.

O. cæruleum, Dru.

Caldwell, common—Crane.

ISODONTIA, Patton.

I. philadelphica, St. Farg.

Caldwell—Crane. Westville—Cresson.

I. tibialis, St. Farg.

Caldwell, not common—Crane. Westville—Cresson.

SPHEX, Linn.

S. cressus, St. Farg.

S. dimidiata, St. Farg.

S. ichneumonea, Linn.

Common everywhere in New Jersey. Caldwell—Crane.

S. instabilis, Smith.

S. pennsylvanica, Linn.

Common everywhere in New Jersey.

S. violaceipennis, St. Farg.

PRIONONYX, Dahlb.

P. atrata, St. Farg.

Caldwell, not common—Crane.

P. thomæ, Fabr.

Westville—Cresson.

Family AMPULICIDÆ.**RHINOPSIS, Westw.**

R. canaliculata, Say.

Family LARRIDÆ.**ASTATA, Latr.**

A. bicolor, Say.

New Jersey specimens are in the Cresson collection.

A. unicolor, Say.

Westville—Cresson.

LYRODA, Say.

L. subita, Say.

Westville—Cresson.

LARRA, Latr.

L. analis, Fabr.

L. argentata, Beauv.

Westville—Cresson.

L. distincta, Smith.

Westville—Cresson.

L. pennsylvanica, Beauv.

Westville—Cresson.

L. terminata, Smith.

TACHYTES, Panz.

T. aurulentus, Fabr.

T. distinctus, Smith.

T. mandibularis, Patton.

Westville—Cresson.

Family BEMBECIDÆ.

SPHECIUS, Dahlb.

S. speciosus, Dru.

Not uncommon throughout New Jersey. Caldwell, common
—Crane.

STIZUS, Latr.

S. servillii, St. Farg.

BEMBEX, Fabr.

B. americana, Fabr.

B. fasciata, Fabr.

MICROBEMBEX, Patton.

M. monodonta, Say.

Caldwell, common—Crane.

MONEDULA, Latr.

M. carolina, Fabr.

M. quadrifasciata, Say.

M. ventralis, Say.

Family NYSSONIDÆ.

GORYTES, Latr.

G. nebulosus, Pack.

Recorded from New Jersey.

HOPLISUS, St. Farg.

H. fulvipennis, Smith.

EUSPONGUS, St. Farg.

E. bipunctatus, Say.

ALYSON, Jur.

A. melleus, Say.

Recorded from New Jersey. Specimens in Cresson collection.

A. oppositus, Say.

Westville—Cresson.

NYSSON, Latr.

N. lateralis, Pack.

N. opulentus, Gerts.

Family PHILANTHIDÆ.**PHILANTHUS, Fabr.**

P. barbatus, Smith.

P. bilunatus, Cress.

P. dubius, Cress.

P. politus, Say.

Westville—Cresson.

P. punctatus, Say.

Caldwell, common—Crane. Westville—Cresson.

P. solivagus, Say.

P. ventilabris, Cress.

EUCERCERIS, Cress.

E. laticeps, Cress.

E. zonatus, Say.

CERCERIS, Latr.

C. bicornuta, Guer.

C. clypeata, Dahlb.

C. compacta, Cress.

Caldwell—Crane.

C. dentrifrons, Cress.

C. deserta, Say.

Caldwell, common—Crane. Common everywhere in the State.

C. fumipennis, Say.

Westville—Cresson.

C. venator, Cress.

Westville—Cresson. Other specimens in Cresson collection, from other parts of New Jersey.

Family MIMESIDÆ.

MIMESA, Shuck.

M. cressonii, Pack.

Recorded from New Jersey. Specimens in the Cresson collection.

M. denticulata, Pack.

M. pauper, Pack.

Westville—Cresson.

PSEN, Latr.

P. leucopus, Say.

P. niger, Pack.

Family PEMPHREDONIDÆ.

SPILOMENA, Shuck.

S. pusilla, Say.

STIGMUS, Jur.

S. americanus, Pack.

S. fraternus, Say.

CEMONUS, Jur.

C. inornatus, Pack.

New Jersey specimens are in the Cresson collection.

PEMPHREDON, Latr.

P. concolor, Say.

P. marginatus, Say.

PASSALÆCUS, Shuck.

P. annulatus, Say.

P. mandibularis, Cress.

Family CRABRONIDÆ.**TRYPOXYLON, Latr.**

T. clavatum, Say.

T. frigidum, Smith.

New Jersey specimens are in the Cresson collection.

T. pennsylvanicum, Sauss.

T. politum, Say.

Caldwell—Crane. Westville—Cresson.

T. rubrocinctum, Pack.

Westville—Cresson.

T. tridentatum, Pack.

Recorded from New Jersey.

RHOPALUM, Kirby.

R. pedicellatum, Pack.

CRABRO, Fabr.

C. ater, Cress.

C. brunneipes, Pack.

C. chrysarginus, St. Farg.

C. decim-maculatus, Say.

Caldwell, common—Crane.

C. denticulatus, Pack.

C. effossus, Pack.

C. frigidus, Smith.

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O. interruptus, St. Farg.

New Jersey specimens are in the Cresson collection.

O. maculatus, Fabr.

O. obscurus, Smith.

New Jersey specimens are in the Cresson collection.

O. pauper, Pack.

O. producticollis, Pack.

Recorded from New Jersey only. Specimens in the Cresson collection.

O. quadrangularis, Pack.

O. sex-maculatus, Say.

Caldwell, common—Crane.

O. singularis, Smith.

Westville—Cresson.

C. stirpicola, Pack.

Recorded from New Jersey by Packard. Specimens in the Cresson collection.

C. trapezoideus, Pack.

Westville—Cresson.

C. villosifrons, Pack.

Recorded from New Jersey by Packard. Specimens in the Cresson collection.

THYREOPUS, St. Farg.

T. advenus, Smith.

T. cribrellifer, Pack.

T. latipes, Smith.

T. tumidus, Pack.

Westville—Cresson.

ANACRABRO, Pack.

A. ocellatus, Pack.

Westville—Cresson.

OXYBELUS, Latr.

O. emarginatus, Say.

Specimens from New Jersey are in the Cresson collection.

O. mucronatus, Pack.

Caldwell—Crane.

O. quadri-notatus, Say.

Specimens from New Jersey are in the Cresson collection.

Family EUMENIDÆ.

ZETHUS, Fabr.

Z. spinipes, Say.

Caldwell—Crane.

EUMENES, Latr.

E. agilis, Sauss.

E. fraternus, Say.

Caldwell, common—Crane.

E. globulosus, Sauss.

New Jersey specimens are in the Cresson collection.

MONOBIA, Sauss.

M. quadridens, Linn.

Caldwell, common—Crane.

NORTONIA, Sauss.

N. symmorpha, Sauss.

Caldwell, not common—Crane.

ODYNERUS, Latr.

O. albomarginatus, Sauss.

O. albophaleratus, Sauss.

Westville—Cresson.

O. annulatus, Say.

O. anormis, Say.

O. arvensis, Sauss.

O. birenimaculatus, Sauss.

O. boscii, St. Farg.

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O. campestris, Sauss.

O. capra, Sauss.

Caldwell, not common—Crane.

O. conformis, Sauss.

O. debilis, Sauss.

O. dorsalis, Sauss.

O. foraminatus, Sauss.

Caldwell, not common—Crane. Westville—Cresson.

O. fulvipes, Sauss.

O. huro, Sauss.

O. leucomelas, Sauss.

O. megæra, St. Farg.

Caldwell—Crane.

O. pedestris, Sauss.

Caldwell, not common—Crane.

O. pennsylvanicus, Sauss.

Westville—Cresson.

O. perennis, Sauss.

New Jersey specimens are in the Cresson collection.

O. philadelphix, Sauss.

Caldwell—Crane.

O. quadrisectus, Say.

O. spinolæ, Sauss.

O. tigris, Sauss.

Caldwell, not common—Crane. Westville—Cresson.

O. turpis, Sauss.

O. unifasciatus, Sauss.

Caldwell, common—Crane.

O. vagus, Sauss.

Family VESPIDÆ.

POLISTES, Latr.

P. annularis, Linn.

P. instabilis, Sauss.

P. metricus, Say.

Caldwell, common—Crane. Common everywhere in the State.

P. nestor, Fabr.

P. pallipes, St. Farg.

Common everywhere in the State.

P. rubiginosus, St. Farg.

P. variatus, Cress.

New Jersey specimens are in the Cresson collection.

VESPA, Linn.

V. arenaria, Fabr.

V. borealis, Kirby.

Caldwell, common—Crane.

V. crabro, Linn.

Caldwell, not common—Crane.

V. carolina, Dru.

V. communis, Sauss.

V. cuneata, Fabr.

V. diabolica, Sauss.

Westville—Cresson.

V. germanica, Fabr.

I have taken this everywhere in New Jersey. Caldwell, common—Crane.

V. infernalis, Sauss.

V. maculata, Linn.

Common everywhere in the State. Caldwell, common—Crane.

V. pennsylvanica, Sauss.

V. serripes, Fabr.

V. vidua, Sauss.

Westville—Cresson.

V. vulgaris, Linn.

Caldwell, not common—Crane.

Family ANDRENIDÆ.

COLLETES, Latr.

- C. americana*, Cress.
- C. compacta*, Cress.
- C. inæqualis*, Say.
- C. propinqua*, Cress.
- C. valida*, Cress.

PROSOPIS, Fabr.

- P. affinis*, Smith.
Caldwell—Crane.
- P. antennata*, Cress.
Recorded from New Jersey only.
- P. modestus*, Say.
- P. sparsa*, Cress.
- P. verticalis*, Cress.

SPHECODES, Latr.

- S. arvensis*, Patton.
- S. dichroa*, Smith.
Caldwell—Crane.
- S. falcifer*, Patton.

HALICTUS, Latr.

- H. albitarsis*, Cress.
- H. imitatus*, Smith.
- H. ligatus*, Say.
Caldwell, common—Crane.
- H. pilosus*, Smith.

AUGOCHLORA, Smith.

- A. fervida*, Smith.
- A. purus*, Say.
Caldwell, common—Crane.
- A. vividula*, Smith.

AGAPOSTEMON, Smith.

A. nigricornis, Fabr.

Caldwell, not common—Crane.

A. pulchra, Smith.

A. radiatus, Say.

A. sericea, Först.

ANDRENA, Fabr.

A. fimbriata, Smith.

A. fragilis, Smith.

A. hilaris, Smith.

A. integra, Smith.

A. perplexa, Smith.

A. placida, Smith.

A. simplex, Smith.

A. valida, Say.

CILISSA, Leach.

C. americana, Smith.

Family APIDÆ.**CALLIOPSIS, Smith.**

C. andreniformis, Smith.

C. pauper, Cress.

PERDITA, Smith.

P. octomaculata, Say.

Westville—Cresson. New Jersey specimens also in Cresson collection.

NOMADA, Fabr.

N. affabilis, Cress.

N. articulata, Smith.

N. bisignata, Say.

Caldwell, not common—Crane.

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N. electa, Cress.

N. festiva, Cress.

Recorded from New Jersey only. Specimens in Collection Cresson.

N. imbricata, Smith.

N. incerta, Cress.

New Jersey specimens are in the Cresson collection.

N. luteola, St. Farg.

New Jersey specimens are in the Cresson collection.

N. modesta, Cress.

N. placida, Cress.

N. ruficornis, Linn.

N. texana, Cress.

Westville—Cresson.

N. torrida, Smith.

N. vespiformis, Först.

N. vineta, Say.

New Jersey specimens are in the Cresson collection.

EPEOLUS, Latr.

E. concavus, Cress.

E. donatus, Smith.

Westville—Cresson.

E. fumipennis, Say.

E. lunatus, Say.

Westville—Cresson. Also in Cresson collection, from New Jersey.

E. mercatus, Fabr.

E. remigatus, Fabr.

Westville—Cresson.

OCELIOXYS, Latr.

O. alternata, Say.

O. altilis, Cress.

New Jersey specimens are in the Cresson collection.

- C. dubitata*, Smith.
- C. lateralis*, Cress.
- C. lucrosa*, Cress.
- C. modesta*, Smith.
- C. mœsta*, Cress.
- C. 8-dentata*, Say.
Caldwell, rare—Crane.
- C. rufitarsis*, Smith.
- C. sodalis*, Cress.

OSMIA, Panz.

- O. albiventris*, Cress.
Caldwell—Crane. New Jersey specimens are in Collection Cresson.
- O. atriventris*, Cress.
New Jersey specimens are in Collection Cresson.
- O. cognata*, Cress.
- O. faceta*, Cress.
- O. frigida*, Smith.
- O. latitarsis*, Cress.
- O. lignaria*, Say.
Caldwell, rare—Crane. New Jersey specimens are in Collection Cresson.
- O. purpurea*, Cress.
- O. rustica*, Cress.
- O. vicina*, Cress.
- O. simillima*, Smith.
Caldwell, common—Crane.

HERIADES, Spin.

- H. carinatum*, Cress.
New Jersey specimens are in Collection Cresson.
- H. variolosum*, Cress.

ALCIDAMEA, Cress.

A. producta, Cress.

Caldwell—Crane. New Jersey specimens are in Collection Cresson.

ANTHIDIUM, Fabr.

A. notatum, Latr.

New Jersey specimens are in Collection Cresson.

MEGACHILE, Latr.

M. addenda, Cress.

New Jersey specimens are in the Cresson collection.

M. brevis, Say.

Caldwell, common—Crane.

M. exilis, Cress.

New Jersey specimens are in the Cresson collection.

M. frigida, Smith.

Westville—Cresson.

M. latimanus, Say.

Caldwell, common—Crane. Westville—Cresson.

M. melanophæa, Smith.

Westville—Cresson.

M. mendica, Cress.

Caldwell, not common—Crane. Westville—Cresson.

M. montivaga, Cress.

M. morio, Smith.

M. optiva, Cress.

M. perbrevis, Cress.

New Jersey specimens of this species, heretofore recorded only from Texas, are in the Cresson collection.

M. pruina, Smith.

M. pugnata, Say.

New Jersey specimens are in the Cresson collection.

M. relativa, Cress.

M. sayi, Cress.

CERATINA, Latr.

C. dupla, Say.

Caldwell, not common—Crane. Westville—Cresson.

MELISSODES, Latr.

M. aurigenia, Cress.

M. bimaculata, St. Farg.

Westville, common—Cresson.

M. compta, Cress.

Westville—Cresson.

M. dentiventris, Smith.

M. desponsa, Smith.

New Jersey specimens are in the Cresson collection.

M. obliqua, Say.

M. pennsylvanica, St. Farg.

M. rustica, Say.

Westville—Cresson.

XENOGLLOSSA, Smith,

X. pruinosa, Say.

EMPHOR, Patton.

E. bombiformis, Cress.

ENTECHNIA, Patton.

E. taurea, Say.

ANTHOPHORA, Latr.

A. abrupta, Say.

Caldwell, common—Crane.

A. bomboides, Kirby.

A. pyralitarsis, Dours.

XYLOCOPA, Latr.

X. virginica, Dru.

Common all over the State.

APATHUS, Newn.

- A. ashtoni**, Cress.
Caldwell—Crane.
- A. citrinus**, Smith.
- A. elatus**, Fabr.
Caldwell—Crane.
- A. laboriosus**, Fabr.
Caldwell—Crane.

BOMBUS, Latr.

- B. affinis**, Cress.
Greenwood Lake, rare—Crane.
- B. borealis**, Kirby.
- B. carolinus**, Linn.
- B. consimilis**, Cress.
Caldwell, not common—Crane.
- B. fervidus**, Fabr.
- B. pennsylvanicus**, De G.
Caldwell, common—Crane.
- B. ridingsii**, Cress.
- B. separatus**, Cress.
Caldwell, common—Crane.
- B. ternarius**, Say.
- B. terricola**, Kirby.
- B. vagans**, Smith.
Caldwell, rare—Crane.
- B. virginicus**, Oliv.
Caldwell, common—Crane.

APIS, Linn.

- A. mellifica**, Linn.
Common everywhere in New Jersey.

ORDER COLEOPTERA.

Family CICINDELIDÆ.

CICINDELA, Linn.

C. unipunctata, Fabr.

Atco, Woodstown, rare—Liebeck. Gloucester county, rare—Wenzel.

C. modesta, Dej.

Gloucester, Camden and Atlantic counties, locally common—Wenzel. Gloucester, Egg Harbor, moderately abundant—Liebeck. Brigantine Beach, mainland—Hamilton. Newark. I have taken it at Greenville, and in Ocean county. The species is very local, but usually not rare where it occurs. It appears in May, and again in September.

C. sexguttata, Fabr.

Gloucester, Camden and Atlantic counties, common—Wenzel. Generally distributed—Liebeck. Newark. Madison. This species occurs rather commonly all over the State, and frequents woods rather than open sand.

Var. consentanea, Dej.

Atco, rare—Liebeck. Brigantine Beach, mainland, abundant—Hamilton. This is usually extremely rare and quite different from the typical form.

Var. patruela, Dej.

Specimens from New Jersey are in Dr. Horn's collection.

C. purpurea, Oliv.

Generally distributed, moderately abundant—Liebeck. Gloucester, Camden and Atlantic counties, not common—Wenzel. Caldwell—Crane. Newark. Madison. I have found this in Ocean county and near Jersey City, along roads in sandy meadows.

C. ancocisconensis, Harris.

Caldwell, rare, one specimen only taken—Crane.

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C. generosa, Dej.

Gloucester, Camden and Atlantic counties, common locally—Wenzel. Gloucester, moderately abundant—Liebeck. Newark, Ocean county, Greenville—Smith. Brigantine Beach, in September, abundant—Hamilton. Also rather local, but quite generally distributed.

C. vulgaris, Say.

Gloucester, Camden and Atlantic counties, common—Wenzel. Generally distributed, moderately abundant—Liebeck. Brigantine Beach, in September, abundant—Hamilton. Caldwell, common—Crane. Not on the Newark list, and I have not myself taken it.

C. repanda, Dej.

Common everywhere. Reported on all lists and everywhere as abundant. I have seen it in all parts of the State visited.

Var. 12-guttata, Dej.

Gloucester, moderately abundant—Liebeck. Gloucester and Camden counties, common—Wenzel. Newark. Caldwell, rare—Crane.

C. hirticollis, Say.

Gloucester, Camden and Atlantic counties, common—Wenzel. Gloucester, sea-shore, common—Liebeck. Brigantine Beach, in September, common—Hamilton. Madison. I have taken it at Sandy Hook, Long Branch and Five-Mile Beach. It will be found common everywhere along the coast. It is not on the Newark list.

C. punctulata, Fabr.

Common everywhere, and reported on all lists. It is found even in cities, along side streets, and is perhaps the most abundant and widely distributed of all the species of the genus.

C. tortuosa, Dej.

Atlantic City, rare—Liebeck.

C. dorsalis, Say.

Occurs all along the sea-shore from Sandy Hook to Cape May; common.

C. marginata, Fabr.

Atlantic county, not common—Wenzel. Delaware Bay, rare—Liebeck. I have not taken it in this State, but have found

it on Long Island, along the muddy margins of ponds near the shore; always scarce.

***O. lepida*, Dej.**

Atlantic City, not common—Liebeck, Wenzel. Brigantine Beach, in September, not abundant—Hamilton. It has also been taken at Sandy Hook. Mr. Wenzel informs me that the species lives in holes made beneath little tufts of long grass.

***O. marginipennis*, Dej.**

Essex, and along the Delaware—Wenzel.

***O. abdominalis*, Fabr.**

Dacosta, rare—Liebeck. Atlantic, rare—Wenzel.

Family CARABIDÆ.

OMOPHRON, Latr.

***O. labiatum*, Fabr.**

Camden, rare—Liebeck. Atlantic county, not common—Wenzel. Brigantine Beach, in September—Hamilton.

***O. americanum*, Dej.**

Atlantic county, not common—Wenzel. Gloucester, rare—Liebeck. Greenville, June and September—Schaupp. Caldwell, rare—Crane.

***O. tessellatum*, Say.**

Atlantic county, not common—Wenzel.

CYCHRUS, Fabr.

***C. stenostomus*, Web.**

Gloucester, rare—Wenzel. Rare, no exact locality—Liebeck. Caldwell, rare—Crane. Palisades, May and June, under stones—Schaupp. Newark.

***Var. lecontei*, Dej.**

Gloucester, rare—Wenzel. Westville, rare—Liebeck. Madison. Newark. Palisades, under stones, May and June—Schaupp.

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C. elevatus, Fabr.

Cape May county, rare—Wenzel. Egg Harbor, Anglesea, rare—Liebeck. Newark.

C. viduus, Dej.

Newark; on the list without comment. Fort Lee, rare—Linell.

CARABUS, Linn.

C. sylvosus, Say.

Gloucester, rare—Liebeck, Wenzel. Camden county, rare—Wenzel. Greenville, in June, rare—Schaupp. Newark.

C. serratus, Say.

Gloucester, rare—Liebeck. Gloucester and Camden counties, not common—Wenzel. Caldwell, rare—Crane. Hoboken, Palisades, June to September—Schaupp. Newark. Madison. This species is more usually at the base of trees, hiding among the grass. It is quite frequently taken at night, while "sugaring" for moths, being attracted by the bait.

C. limbatus, Say.

Rare at Gloucester—Liebeck, Wenzel; and Camden—Wenzel. Newark. Greenville, May and September—Schaupp. Caldwell, common—Crane. This was the common species at Lahaway, Ocean county, on the cranberry bogs.

C. vinctus, Weber.

Generally distributed, common—Liebeck. Camden, Gloucester and Atlantic counties, common—Wenzel. Caldwell, common—Crane. Newark. Palisades. Jersey City. New Brunswick. The most common of the genus, and the most general under stones and logs.

CALOSOMA, Weber.

C. externum, Say.

Gloucester, rare—Liebeck. Gloucester, Camden, Atlantic and Cape May counties, not common—Wenzel. Newark, Greenville, June and September, rare, under stones—Schaupp.

C. scrutator, Fabr.

Generally distributed, abundant—Liebeck. Same localities as *externum*, common—Wenzel. Cast up on Brigantine Beach

in September—Hamilton. Caldwell, common—Crane. Madison. Newark. Often on trees—Schaupp. This species is not often found in fields under stones, and is rather a tree climber and caterpillar hunter. It is quite commonly cast up by the tide along the sea-shore.

C. willcoxi, Lec.

Cape May county, not common—Wenzel. Atlantic City, rare—Liebeck. Newark.

C. sayi, Dej.

Camden, Gloucester, Atlantic and Cape May counties, rare—Wenzel. Atlantic City, rare—Liebeck.

C. calidum, Fabr.

Same localities as above, common—Wenzel. Generally distributed, abundant—Liebeck. Caldwell, common—Crane. Madison. Newark. Occurs throughout the State under stones. It is much less commonly cast ashore than is *scrutator*.

ELAPHRUS, Fabr.

E. fuliginosus, Say.

Snake Hill—Linell.

E. ruscarius, Say.

Camden and Gloucester counties, common—Wenzel. Westville, moderately abundant—Liebeck. June and July, Greenville. Mud flats behind Hoboken—Schaupp. Newark.

BLETHISA, Bon.

B. quadricollis, Hald.

Caldwell, rare—Crane.

NOTIOPHILUS, Dum.

N. æneus, Hbst.

Camden and Gloucester counties, common—Wenzel. Caldwell, rare—Crane.

N. sibiricus, Mots.

Newark. This species is not rare on Long Island among leaves in open woods. Madison.

NEBRIA, Latr.

N. pallipes, Say.

Camden and Gloucester counties, common—Wenzel. Generally distributed, abundant—Liebeck. Fort Lee. Orange Mountains, June and September, along running water—Schaupp. This species is common along the margin of rocky streams under stones just at the edge of the water.

PASIMACHUS, Bon.

P. sublævis, Beauv.

Anglesea, rare—Wenzel, Liebeck. Brigantine Beach, island, September, frequent—Hamilton. I found a dead specimen in July, at Anglesea.

P. elongatus, Lec.

Atlantic county, rare—Wenzel.

P. punctulatus, Hald.

Egg Harbor, rare—Liebeck.

SCARITES, Fabr.

S. subterraneus, Fabr.

Generally distributed, abundant—Liebeck. Brigantine Beach, island, in September, frequent—Hamilton. Caldwell, common—Crane. Newark. Madison. I have found it all over the State, though never in any large number.

Var. substriatus, Hald.

Camden and Gloucester counties, common—Wenzel.

DYSCHIRIUS, Bon.

D. globulosus, Say.

Generally distributed, rare—Liebeck. Camden and Gloucester counties, not common—Wenzel. Newark.

D. terminatus, Lec.

Atlantic City, rare—Liebeck, Wenzel.

D. sphæricollis, Say.

Gloucester, rare—Liebeck. Brigantine Beach, salt marshes, in September—Hamilton. Marshy meadows near Hoboken, April and September—Schaupp.

D. sellatus, Lec.

Atlantic City, not common—Liebeck, Wenzel.

D. pallipennis, Say.

Atlantic City, rare—Liebeck. Salt marshes, Brigantine Beach, in September—Hamilton.

D. fliformis, Lec.

Salt marshes, Brigantine Beach, September—Hamilton.

D. pumilus, Dej.

Salt marshes, Brigantine Beach, September—Hamilton.

CLIVINA, Latr.**C. impressifrons**, Lec.

Generally distributed, rare—Liebeck.

C. rubicunda, Lec.

Atlantic City, rare—Liebeck.

C. americana, Dej.

Generally distributed, not rare—Liebeck. Marshy meadows near Hoboken, May and September—Schaupp.

C. striatopunctata, Dej.

Salt marshes, Brigantine Beach, September—Hamilton.

C. ferrea, Lec.

Gloucester, not common—Wenzel.

C. convexa, Lec.

Atlantic City, rare—Liebeck.

C. bipustulata, Fabr.

Generally distributed, moderately abundant—Liebeck. Camden and Gloucester counties, not common—Wenzel. Caldwell, rare—Crane.

SCHIZOGENIUS, Putz.**S. lineolatus**, Say.

Generally distributed, moderately abundant—Liebeck. Camden and Gloucester counties, not common—Wenzel. Under stones on banks of Passaic, June and September—Schaupp.

S. ferrugineus, Putz.

Salt marshes, Brigantine Beach, September—Hamilton.

ARDISTOMIS, Putz.

A. obliquata, Putz.

Atlantic City, moderately abundant—Liebeck.

A. viridis, Say.

Generally distributed, moderately abundant—Liebeck. Camden and Gloucester counties, not common—Wenzel. Newark. Clifton, in June—Schaupp.

PANAGÆUS, Latr.

P. crucigerus, Say.

Northern New Jersey, rare—Liebeck. Brigantine Beach, in September, frequent—Hamilton. Snake Hill, under stones, May and June—Schaupp.

P. fasciatus, Say.

Atlantic county, rare—Wenzel. Snake Hill, under stones, May and June—Schaupp. Caldwell, rare—Crane.

NOMIUS, Lap.

N. pygmæus, Dej.

Near Newark, one specimen—Bischoff.

BEMBIDIUM, Latr.

B. punctatostriatum, Say.

Banks of Passaic, May and September—Schaupp.

B. inæquale, Say.

Westville, moderately abundant—Liebeck. Camden and Gloucester counties, not common—Wenzel. Banks of Passaic, May and September—Schaupp.

B. nitidulum, Dej.

Banks of Passaic, May and September—Schaupp.

B. americanum, Dej.

Camden and Gloucester counties, common—Wenzel. Gloucester, moderately abundant—Liebeck. Banks of Passaic, May and September—Schaupp. Raritan, at New Brunswick—Smith.

B. antiquum, Dej.

Camden and Gloucester counties, not common—Wenzel. Banks of Passaic, May and September—Schaupp.

B. chalceum, Dej.

Banks of Passaic, May and September—Schaupp.

B. nigrum, Say.

Camden and Gloucester counties, not common—Wenzel. Banks of Passaic, May and September—Schaupp.

B. planatum, Lec.

Banks of Passaic, May and September—Schaupp.

B. rupestre, Dej.

Gloucester, moderately abundant—Liebeck. Camden and Gloucester counties, common—Wenzel. Newark.

B. lacunarium, Zimm.

Fort Lee, in running brooks—Linell.

B. dorsale, Say.

Gloucester county, rare—Wenzel.

B. patrulee, Say.

Banks of Passaic, May and September—Schaupp.

B. variegatum, Say.

Camden and Gloucester counties, common—Wenzel. Gloucester, moderately abundant—Liebeck. Banks of Passaic, May and September—Schaupp. Newark—Bischoff.

B. intermedium, Kirby.

Gloucester, moderately abundant—Liebeck.

B. versicolor, Lec.

Camden and Gloucester counties, common—Wenzel. Banks of Passaic, May and September—Schaupp.

B. pictum, Lec.

Camden and Gloucester counties, common—Wenzel. Camden, moderately abundant—Liebeck.

B. constrictum, Lec.

Atlantic county, common—Wenzel. Brigantine Beach, September, abundant—Hamilton.

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B. contractum, Say.

Atlantic City, not common—Wenzel, Liebeck. Brigantine Beach, September, not common—Hamilton. Anglesea, July—Schwarz.

B. affine, Say.

Camden, moderately abundant—Liebeck. Ocean county—Smith.

B. quadrimaculatum, Linn.

Camden and Gloucester counties, not common—Wenzel, Liebeck. The most abundant species in fields and gardens everywhere—Smith.

B. semistriatum, Hald.

Banks of Passaic, May and September—Schaupp.

TACHYS, Schaum.

T. proximus, Say.

Sandy banks of Passaic, May and September—Schaupp. Generally distributed, moderately abundant—Liebeck.

T. scitulus, Lec.

Sandy banks of Passaic, May and September—Schaupp. Camden, Gloucester, common—Wenzel.

T. occultator, Casey.

Brigantine Beach, in September—Hamilton.

T. lævus, Say.

New Brunswick, rare—Smith.

T. nanus, Gyll.

Generally distributed, common—Wenzel, Liebeck. Newark. Brigantine Beach, mainland and island, September—Hamilton. Sandy banks of Passaic, May and September—Schaupp.

T. flavicauda, Say.

Generally distributed, common—Wenzel, Liebeck. I have taken this everywhere in the State, under bark of trees.

T. tripunctatus, Say.

Sandy banks of Passaic, May and September—Schaupp.

T. capax, Lec.

Ocean county, cranberry bogs, not common—Smith.

T. xanthopus, Say.

Generally distributed, moderately abundant—Liebeck.

T. incurvus, Say.

Generally distributed, common—Liebeck, Wenzel. Sandy banks of Passaic, May and September—Schaupp. Brigantine Beach, September—Hamilton.

T. fuscicornis, Chd.

Brigantine Beach, September—Hamilton.

PATROBUS, Dej.**P. longicornis**, Say.

Generally distributed, moderately abundant—Liebeck. Camden and Gloucester counties, not common—Wenzel. Newark.

POGONUS, Dej.**P. texanus**, Chd.

Atlantic City—Collections Drs. Horn and Castle. According to Dr. Horn, this Texan species has been twice taken at Atlantic City.

MYAS, Dej.**M. coracinus**, Say.

Gloucester, rare—Wenzel. Newark.

M. cyanescens, Dej.

Clifton, Fort Lee, June and July—Schaupp.

PTEROSTICHUS, Bon.**P. adoxus**, Say.

Camden, Gloucester, not common—Wenzel, Liebeck. Palisades—Schaupp. Brigantine Beach, mainland, September—Hamilton.

P. rostratus, Newn.

Palisades—Schaupp. New Jersey—Wenzel.

P. diligendus, Chd.

Palisades—Schaupp. Newark.

P. honestus, Say.

Foot of Palisades above Hoboken—Schaupp, Smith.

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P. lachrymosus, Newn.

Palisades—Schaupp, Smith. Newark.

P. coracinus, Newn.

Newark.

P. stygius, Say.

Generally distributed, moderately abundant—Liebeck. Camden and Gloucester counties, not common—Wenzel. Brigantine Beach, mainland and island, September—Hamilton.

P. moestus, Say.

Newark. Caldwell, common—Crane. New Brunswick; rare.

P. sculptus, Lec.

Atlantic City—Dr. Castle.

P. sayi, Brullé.

Generally distributed, common—Wenzel, Liebeck. Newark.

P. lucublandus, Say.

Generally distributed, common—Wenzel, Liebeck. Caldwell, common—Crane. Newark. Madison. Brigantine Beach, in September—Hamilton. Common along the shore, under wreckage, and abundant in tilled fields, under all shelter—Smith.

P. ebeninus, Dej.

Atlantic City, rare—Liebeck.

P. caudicalis, Say.

Generally distributed, moderately common—Liebeck.

P. luctuosus, Dej.

Rare, exact locality unknown—Liebeck.

P. corvinus, Dej.

Moderately common, generally distributed—Liebeck. Palisades—Schaupp.

P. tartaricus, Say.

Hoboken, rare—Linell.

P. mutus, Say.

Generally distributed, common—Liebeck. Palisades—Schaupp. Caldwell, common—Crane.

P. erythropus, Dej.

Generally distributed, rare—Liebeck. Atlantic county, common—Wenzel. Brigantine Beach, in September, common—

Hamilton. Palisades—Schaupp. Newark. Common on cranberry bogs in Ocean county, May—Smith.

P. patruelis, Dej.

Generally distributed, rare—Liebeck. Camden and Gloucester counties, not common—Wenzel. Palisades—Schaupp. Newark. Common on cranberry bogs, Ocean county, May—Smith.

EVARTHUS, Lec.

E. sigillatus, Say.

Atlantic City, rare—Liebeck. Madison, not uncommon—Paulmier. Caldwell, rare—Crane.

AMARA, Bon.

A. avida, Say.

Camden county, rare—Wenzel. Westville, Gloucester, rare—Liebeck. Palisades—Schaupp.

A. exarata, Dej.

Generally distributed, not uncommon—Liebeck. Caldwell, rare—Crane.

A. latior, Kirby.

On the Newark list.

A. angustata, Say.

Generally distributed, not uncommon—Liebeck. Palisades—Schaupp.

A. pallipes, Kirby.

Camden, Gloucester and Atlantic counties, common—Wenzel.

A. impuncticollis, Say.

Generally distributed, rather common—Wenzel, Liebeck. Caldwell, common—Crane. Newark. Palisades—Schaupp.

A. basillaris, Say.

New Jersey—Henshaw.

A. cupreolata, Putz.

New Jersey—Henshaw.

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A. interstitialis, Dej.

Generally distributed, moderately abundant—Liebeck. Camden and Gloucester counties, not common—Wenzel. Palisades—Schaupp. Newark—Bischoff.

A. obesa, Say.

Sea-shore, not uncommon—Liebeck. Atlantic county, not common—Wenzel. Cape May, in July—Schwarz. Newark—Palisades—Schaupp.

A. chalcea, Dej.

Palisades—Schaupp.

A. gibba, Lec.

New Jersey—Henshaw.

A. rubrica, Hald.

On the Newark list.

A. subænea, Lec.

Brigantine Beach, in September—Hamilton.

A. musculus, Say.

Gloucester, sea-shore, not uncommon—Liebeck. Atlantic and Cape May counties, not common—Wenzel. Brigantine Beach, in September, frequent on herbage—Hamilton. Palisades—Schaupp.

A. acutangula, Putz.

Westville, rare—Liebeck.

DIPLOCHILA, Brullé.

D. laticollis, Lec.

Atlantic City, rare—Liebeck. Palisades, May and June, not common—Schaupp, Smith.

Var. major, Lec.

Palisades, May and June, more rare than the typical form—Smith.

DICÆLUS, Bon.

D. dilatatus, Say.

Fort Lee, Clifton, June and September, not rare—Schaupp. Generally distributed, not common—Wenzel. Caldwell, rare—Crane. Newark.

D. purpuratus, Bon.

Camden county, rare—Wenzel. Clifton, June and July,
rare—Schaupp. Newark. Madison.

D. ovalis, Lec.

Gloucester, Camden and Atlantic counties, not common—
Wenzel. Westville, rare—Liebeck.

D. elongatus, Bon.

Generally distributed, not uncommon—Wenzel, Liebeck. Cald-
well, common—Crane. Palisade woods—Schaupp. Newark.

D. teter, Bon.

Palisade woods—Schaupp.

D. politus, Dej.

Gloucester, Camden and Atlantic counties, not common—Wen-
zel. Atlantic City, rare—Liebeck. Palisade woods—Schaupp.

BADISTER, Clairv.**B. notatus**, Hald.

Gloucester, rare—Liebeck.

B. micans, Lec.

Westville, rare—Liebeck.

CALATHUS, Bon.**C. gregarius**, Say.

Generally distributed, common—Wenzel, Liebeck. Brigan-
tine Beach, mainland and island, September—Hamilton.
Palisades, everywhere common—Schaupp.

C. opaculus, Lec.

New Jersey—Henshaw.

C. impunctatus, Say.

Atco, sea-shore, not common—Wenzel. Atlantic City, rare—
Liebeck. Fort Lee, rare—Schaupp.

PLATYNUS, Bon.**P. angustatus**, Dej.

Fort Lee, not common—Schaupp. Ocean county, cranberry
bogs, rare—Smith.

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P. decens, Say.

Palisades, Fort Lee, common—Schaupp. Caldwell, common, Crane. Anglesea, July—Schwarz. Newark.

P. sinuatus, Dej.

Generally distributed, moderately common—Liebeck. Camden and Gloucester counties, not rare—Wenzel. Palisades, Fort Lee—Schaupp. Ocean county, cranberry bogs, rare—Smith.

P. opaculus, Lec.

Fort Lee, rare—Schaupp.

P. tenuicollis, Lec.

Atlantic City—Castle.

P. cincticollis, Say.

Generally distributed, moderately abundant—Liebeck. Camden and Gloucester counties, not uncommon—Wenzel. Fort Lee—Schaupp. Newark.

P. reflexus, Lec.

Generally distributed, moderately abundant—Liebeck. Fort Lee—Schaupp.

P. extensicollis, Say.

Generally distributed, common—Liebeck, Wenzel. Fort Lee, Clifton, Weehawken, common—Schaupp. Newark. Madison.

P. decorus, Say.

Generally distributed, moderately abundant—Liebeck. Camden and Gloucester counties, not uncommon—Wenzel. Palisades, common—Schaupp. Caldwell, common—Crane. Newark.

P. atratus, Lec.

Caldwell, very rare, one specimen only—Crane.

P. melanarius, Dej.

Camden and Gloucester counties, not uncommon—Wenzel. Fort Lee, Palisade woods—Schaupp. Newark.

P. propinquus, G. & H.

Camden and Gloucester counties, not uncommon—Wenzel.

P. affinis, Kirby.

Palisade woods—Schaupp. Caldwell, rare—Crane.

P. metallescens, Lec.

Palisade woods—Schaupp. Newark.

P. cupripennis, Say.

Generally distributed, common—Wenzel. Sea-shore, moderately abundant—Liebeck. Common in fields—Schaupp. Newark. Caldwell, common—Crane.

P. excavatus, Dej.

Generally distributed, rare—Liebeck. Palisades, rare—Schaupp.

P. ferreus, Hald.

Gloucester, rare—Liebeck. Palisades, rare—Schaupp.

P. basalis, Lec.

Hoboken, very rare—Linell.

P. nutans, Say.

Palisades, rare—Schaupp.

P. octopunctatus, Fabr.

Sea-shore, rare—Liebeck. Generally distributed, rare—Wenzel. Caldwell, rare—Crane. Palisades, rare—Schaupp. Newark.

P. placidus, Say.

Westville, Gloucester, moderately common—Liebeck. Palisades, not rare—Schaupp, Smith. Madison.

P. obsoletus, Say.

Sea-shore, quite common—Liebeck. Palisades—Schaupp. Newark.

P. æruginosus, Dej.

Generally distributed, not common—Wenzel. Under bark, Hoboken—Schaupp.

P. crenistriatus, Lec.

Palisades—Schaupp. Brigantine Beach, in September—Hamilton.

P. rubripes, Zimm.

Sea-shore, not uncommon—Liebeck, Wenzel. Brigantine Beach, in September—Hamilton. Palisades—Schaupp.

P. punctiformis, Say.

Generally distributed, moderately abundant—Liebeck, Wenzel. Brigantine Beach, in September, common—Hamilton.

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Fort Lee, Palisades—Schaupp. Ocean county, cranberry bogs,
rare—Smith. Anglesea—Wenzel.

P. sordens, Kirby.

Palisades—Schaupp.

P. ruficornis, Lec.

Generally distributed, not common—Wenzel, Liebeck. Palisades, Fort Lee—Schaupp.

P. picipennis, Kirby.

Hoboken, rare—Linell.

P. lutulentus, Lec.

Camden, rare—Liebeck. Hoboken, rare—Linell. Palisades—Schaupp. Newark. Cranberry bogs, rare—Smith.

OLISTHOPUS, Dej.

O. parmatum, Say.

Generally distributed, rare—Wenzel. Atlantic City, rare—Liebeck.

O. micans, Lec.

Atlantic City, rare—Liebeck.

ATRANUS, Lec.

A. pubescens, Dej.

Camden and Gloucester, rare—Wenzel. Westville, rare—Liebeck. Palisades, in June, rare—Schaupp. Fort Lee, in running brooks—Linell. Newark.

LEPTOTRACHELUS, Latr.

L. dorsalis, Fabr.

New Jersey—Schaupp. I have seen isolated specimens of this species from different parts of the State.

OASNONIA, Latr.

O. pennsylvanica, Linn.

Generally distributed, rather common—Wenzel, Liebeck. Brigantine Beach, in September—Hamilton. Caldwell, common—Crane. Newark.

GALERITA, Fabr.**G. janus, Fabr.**

Generally distributed, moderately abundant—Wenzel, Liebeck.
 Brigantine Beach, in September—Hamilton. Caldwell, common
 —Crane. Newark. Madison.

G. bicolor, Dru.

Generally distributed, more rare—Liebeck, Wenzel.

TETRAGONODERUS, Dej.**T. fasciatus, Hald.**

Generally distributed, rare—Wenzel. Camden, rare—Liebeck.

LEBIA, Latr.**L. grandis, Hentz.**

Generally distributed, common—Wenzel, Liebeck. New
 Jersey, July and September—Schaupp. Brigantine Beach, in
 September—Hamilton. Caldwell, common—Crane. Newark.
 Madison.

L. atriventris, Say.

Generally distributed, rather common—Liebeck, Wenzel.
 New Jersey, July and September—Schaupp. Caldwell, common
 —Crane. Newark. Madison.

L. tricolor, Say.

Atlantic City, rare—Liebeck.

L. pulchella, Dej.

Sea-shore, rare—Liebeck. Gloucester and Atlantic counties,
 rare—Wenzel.

L. cyanipennis, Dej.

Generally distributed, rare—Liebeck. Gloucester county,
 rare—Wenzel.

L. marginicollis, Dej.

Dacosta, rare—Liebeck.

L. viridis, Say.

Generally distributed, common—Wenzel, Liebeck. Green-
 ville, Ridgewood, Passaic, June and July—Schaupp. Caldwell,
 rare—Crane. Newark. Madison.

Var. mœsta, Lec.

Atco, rare—Liebeck.

L. pumila, Dej.

Generally distributed, rare—Liebeck. Greenville, Ridgewood, Passaic, June and July—Schaupp. Newark.

L. pleuritica, Lec.

Fort Lee, rare—Schaupp.

L. viridipennis, Dej.

Brigantine Beach, in September, frequent—Hamilton. Fort Lee—Schaupp. Newark.

L. ornata, Say.

Generally distributed, rare—Liebeck. Common—Wenzel. Greenville, Ridgewood, Passaic, June and July—Schaupp. Caldwell, rare—Crane. Anglesea, in July—Schaupp. Newark.

L. analis, Dej.

Generally distributed, not rare—Wenzel. Westville, rare—Liebeck. Fort Lee—Schaupp.

L. fuscata, Dej.

Generally distributed, rare—Liebeck. Greenville, Ridgewood, Passaic, June and July—Schaupp.

L. scapularis, Dej.

Generally distributed, not common—Wenzel, Liebeck. Fort Lee—Schaupp. Newark.

L. vittata, Fabr.

Generally distributed, rare—Liebeck. Madison.

Var. spraguei, Horn.

Collected in New Jersey—Castle.

L. bivittata, Fabr.

Sea-shore, rare—Liebeck.

COPTODERA, Dej.

C. ærata, Dej.

Sea-shore, rare—Liebeck.

DROMIUS, Bon.**D. piceus, Dej.**

Generally distributed, rare—Liebeck. Camden, Gloucester, not common—Wenzel. Hoboken, under bark—Schaupp. Newark.

APRISTUS, Chd.**A. cordicollis, Lec.**

Gloucester, rare—Liebeck.

BLECHRUS, Mots.**B. nigrinus, Mann.**

Hoboken, under bark—Schaupp.

METABLETUS, Schm.-Goeb.**M. americanus, Dej.**

Gloucester and Camden, rare—Wenzel.

AXINOPALPUS, Lec.**A. biplagiatus, Dej.**

Hoboken, under bark—Schaupp.

CALLIDA, Dej.**C. purpurea, Say.**

Dacosta, rare—Liebeck. Atlantic county, rare—Wenzel. Greenwood Lake, sometimes not uncommon.

C. punctata, Lec.

Caldwell, rare—Crane.

PLOCHIONUS, Dej.**P. timidus, Hald.**

Generally distributed except along shore—Wenzel. Westville, not rare—Liebeck. Hoboken, under bark—Schaupp.

P. amandus, Newn.

Very rare, one specimen only, Caldwell—Crane. I have not seen this.

PINACODERA, Schaum.

P. limbata, Dej.

Camden and Gloucester counties, sea-shore—Wenzel. Sea-shore, not rare—Liebeck. Anglesea, in July—Schwarz. Newark.

P. platicollis, Say.

Gloucester and Camden counties, sea-shore—Wenzel. Westville, rare—Liebeck. Madison.

CYMINDIS, Latr.

C. americana, Dej.

Generally distributed, not rare—Wenzel. Sea-shore, rare—Liebeck.

C. pilosa, Say.

Generally distributed, moderately abundant—Liebeck. Camden and Gloucester counties, not common—Wenzel. Caldwell, common—Crane.

C. neglecta, Hald.

Camden and Gloucester, rare—Wenzel. Newark.

APENES, Lec.

A. lucidula, Dej.

Sea-shore, rare—Liebeck. Atlantic county, not common—Wenzel.

A. sinuata, Say.

Atlantic county, rare—Wenzel. Anglesea, rare—Liebeck. Newark—Bischoff. Both species will be found from Sandy Hook to Cape May.

HELLUOMORPHA, Lap.

H. bicolor, Harris.

Camden county, rare—Wenzel. Newark.

H. ferruginea, Lec.

Greenville, under logs, rare—Schaupp.

BRACHYNUS, Web.

B. viridipennis, Dej.

New Jersey—Schaupp. Newark.

- B. minutus**, Harr.
Along the Palisades—Schaupp.
- B. perplexus**, Dej.
Along the Palisades—Schaupp.
- B. medius**, Harr.
Along the Palisades—Schaupp.
- B. quadripennis**, Dej.
Along the Palisades—Schaupp.
- B. conformis**, Dej.
Along the Palisades—Schaupp.
- B. cyanipennis**, Say.
Along the Palisades—Schaupp.
- B. alternans**, Dej.
Along the Palisades—Schaupp.
- B. fumans**, Fabr.
Generally distributed, common—Wenzel, Liebeck. Caldwell,
common—Crane. Along the Palisades—Schaupp. Madison.
- B. similis**, Lec.
Brigantine Beach, in September—Hamilton.
- B. cordicollis**, Dej.
Generally distributed, moderately abundant—Liebeck. Along
the Palisades—Schaupp. Caldwell, common—Crane.
- The species of *Brachynus* are ill defined, and not generally
named in collections. It is therefore almost impossible to get
an accurate list. The species collected by Mr. Schaupp may,
however, be considered fairly reliable.

OHLÆNIUS, Bon.

- O. erythropus**, Germ.
Atlantic county, rare—Wenzel.
- O. sericeus**, Först.
Generally distributed, moderately abundant—Wenzel, Liebeck.
Caldwell, common—Crane. Palisades, Fort Lee, Snake Hill,
Ridgewood—Schaupp. Newark. Madison.

C. laticollis, Say.

Generally distributed, rare—Wenzel. Anglesea, rare—Liebeck. Brigantine Beach, in September—Hamilton. Caldwell, rare—Crane. Palisades, Fort Lee, Snake Hill, Ridgewood—Schaupp. The most abundant Carabid at Snake Hill—Linell.

C. diffinis, Chd.

Palisades, in spring—Schaupp.

C. æstivus, Say.

Generally distributed, rather common—Wenzel, Liebeck. Palisades, Fort Lee, Snake Hill, Ridgewood—Schaupp. Caldwell, common—Crane. Newark. Madison.

C. prasinus, Dej.

Caldwell, common—Crane.

C. nemoralis, Say.

Generally distributed, common—Wenzel, Sea-shore, moderately abundant—Liebeck. Caldwell, common—Crane. Palisades, in spring—Schaupp. Newark.

C. tricolor, Dej.

Generally distributed, moderately abundant—Liebeck. Palisades, in spring—Schaupp. Madison.

C. pennsylvanicus, Say.

Generally distributed, not common—Wenzel. Westville, rare—Liebeck. Palisades, in spring—Schaupp.

C. impunctifrons, Say.

Generally distributed, moderately abundant—Liebeck, Wenzel. Caldwell, very rare—Crane. Palisades, in spring.

C. niger, Rand.

Palisades, in spring, rare—Schaupp.

C. purpuricollis, Rand.

A New Jersey specimen is in Dr. Horn's collection.

C. tomentosus, Say.

Generally distributed, not common—Wenzel. Sea-shore, rare—Liebeck. Newark. Madison.

ANOMOGLOSSUS, Chd.**A. emarginatus, Say.**

Generally distributed, not common—Wenzel. Sea-shore, moderately abundant—Liebeck. Fort Lee, Ridgewood, not rare—Schaupp. Caldwell, common—Crane.

A. pusillus, Say.

Generally distributed, rather common—Wenzel. Rare—Liebeck. New Jersey, rare—Schaupp. Newark. Madison.

BRACHYLOBUS, Chd.**B. lithophilus, Say.**

Palisades, in March, rare—Schaupp. Gloucester, rare—Liebeck.

LACHNOCREPIS, Lec.**L. parallelus, Say.**

Gloucester, Westville, rare—Liebeck. Snake Hill, common—Linell.

OODES, Bon.**O. amaroides, Dej.**

Palisades, rare—Schaupp.

O. americanus, Dej.

Palisades, common—Schaupp. Westville, rare—Liebeck.

O. fluvialis, Lec.

Westville, Gloucester, rare—Liebeck. Camden, Gloucester, not rare—Wenzel.

O. lecontei, Chd.

Camden and Gloucester counties, rare—Wenzel.

GEOPINUS, Lec.**G. incrassatus, Dej.**

Generally distributed in sandy districts along water—Wenzel. Westville, moderately abundant—Liebeck. Brigantine Beach, in September, frequent—Hamilton. Greenville, six inches deep, in sandy soil—Schaupp. Newark.

CRATACANTHUS, Dej.

C. dubius, Beauv.

Generally distributed, moderately abundant—Liebeck. In sandy districts along water-courses, common—Wenzel. Newark. New Brunswick.

AGONODERUS, Dej.

A. lineola, Fabr.

Generally distributed, rather common—Wenzel, Liebeck. Brigantine Beach, in September—Hamilton. Along Palisades—Schaupp. Caldwell, common—Crane. Newark.

A. infuscatus, Dej.

Generally distributed, not uncommon—Wenzel. Anglesea, rare—Liebeck. Brigantine Beach, in September—Hamilton.

A. pallipes, Fabr.

Generally distributed, common—Wenzel, Liebeck. Brigantine Beach, in September, frequent—Hamilton. Along the Palisades, common—Schaupp. Newark. Madison. In my experience, one of the most abundant Carabids in the State, flying to light, in spring.

A. partiaris, Say.

Generally distributed, rare—Liebeck. Along Palisades, in spring, common—Schaupp. Newark.

A. pauperculus, Lec.

Ocean county, common on cranberry bogs—Smith.

A. indistinctus, Say.

Anglesea, rare—Wenzel. Along the Palisades, rare—Schaupp.

A. testaceus, Dej.

Atlantic City—Castle.

DISCODERUS, Lec.

D. parallelus, Hald.

Atlantic City, not uncommon—Liebeck. Sea-shore, not common—Wenzel.

GYNANDROPUS, Dej.**G. hylacis, Say.**

Generally distributed, not common—Wenzel. Atlantic City, not rare—Liebeck. Under bark of trees, Hoboken—Schaupp. Caldwell, common—Crane.

HARPALUS, Latr.**H. dichrous, Dej.**

Generally distributed, rather rare—Wenzel. Westville, rare—Liebeck. Caldwell, rare—Crane.

H. vulpeculus, Say.

Generally distributed, more common—Wenzel, Liebeck.

H. autumnalis, Say.

Sea-shore, rare—Liebeck.

H. erraticus, Say.

Generally distributed, moderately abundant—Liebeck, Wenzel. Brigantine Beach, in September, abundant—Hamilton. Passaic, Greenville—Schaupp.

H. viridiæneus, Beauv.

Generally distributed, not rare—Wenzel. Sea-shore, rare—Liebeck. Newark. Madison.

H. caliginosus, Fabr.

Generally distributed, common—Wenzel, Liebeck, Schaupp. Brigantine Beach, in September, abundant—Hamilton. Caldwell, common—Crane. Newark.

H. faunus, Say.

Generally distributed, moderately abundant—Schaupp, Wenzel, Liebeck.

H. convivus, Lec.

New Brunswick, rare—Smith.

H. vagans, Lec.

Generally distributed, rather common—Schaupp, Wenzel, Liebeck.

H. pennsylvanicus, De G.

Generally distributed, common—Wenzel, Liebeck, Schaupp. Brigantine Beach, in September, abundant—Hamilton. Caldwell, common—Crane. Newark. Madison.

Var. compar, Lec.

Generally distributed, not so common as the type—Wenzel, Liebeck, Schaupp. Brigantine Beach—Hamilton. Caldwell, common—Crane.

Var. erythropus, Dej.

Along the Palisades, common—Schaupp.

H. spadiceus, Dej.

Along the Palisades, rather rare—Schaupp. Madison.

H. fallax, Lec.

New Jersey—Henshaw.

H. pleuriticus, Kirby.

Along the Palisades, common—Schaupp.

H. herbivagus, Say.

Generally distributed, rather common—Wenzel. Gloucester, Westville, rare—Liebeck. Brigantine Beach, in September—Hamilton. Madison. Ocean county, common on cranberry bogs—Smith.

H. nitidulus, Chd.

Sea-shore, rare—Liebeck.

SELENOPHORUS, Dej.

S. pedicularius, Dej.

Sea-shore, moderately abundant—Liebeck. Brigantine Beach, in September, frequent—Hamilton. Atlantic City—Castle. Ocean Beach—Paulmier.

S. opalinus, Lec.

Sea-shore, moderately abundant—Liebeck. Under leaves, in spring—Wenzel. Atlantic City—Castle. Ocean Beach—Paulmier.

S. ovalis, Dej.

Brigantine Beach, in September—Hamilton.

S. ellipticus, Dej.

Sea-shore, moderately common—Liebeck. Under leaves, in spring—Wenzel. Brigantine Beach, in September—Hamilton. Atlantic City—Castle.

STENOLOPHUS, Dej.**S. carbonarius, Brullé.**

Anglesea, Atlantic City, rare—Liebeck. Brigantine Beach, in September—Hamilton. Ocean Beach—Paulmier.

S. fuliginosus, Dej.

Generally distributed, common—Wenzel. Rare—Liebeck.

S. plebeius, Dej.

Brigantine Beach, in September—Hamilton. Ocean Beach—Paulmier.

S. conjunctus, Say.

Generally distributed, common—Wenzel, Liebeck. Brigantine Beach, in September—Hamilton. Newark. Cranberry bogs, Ocean county, common—Smith.

S. nova species, Horn dixit.

Madison. Several specimens were taken by Mr. Paulmier. It is in Dr. Horn's collection from Allegheny, Pa.

S. ochropezus, Say.

Generally distributed, common—Wenzel, Liebeck. Brigantine Beach, in September—Hamilton. Newark. Ocean county, on cranberry bogs, common—Smith.

S. dissimilis, Dej.

Sea-shore, rare—Liebeck.

ACUPALPUS, Latr.**A. hydropicus, Lec.**

Ocean county, common on cranberry bogs, in May—Smith.

A. carus, Lec.

Generally distributed, common—Wenzel, Liebeck.

BRADYCELLUS, Er.**B. rupestris, Say.**

Generally distributed, moderately abundant—Wenzel, Liebeck. Brigantine Beach, in September—Hamilton. Newark. Ocean county, cranberry bogs, not common—Smith.

ANISODACTYLUS, Dej.

- A. dulcicollis, Laf.**
Brigantine Beach, in September—Hamilton.
- A. rusticus, Dej.**
Generally distributed, common—Wenzel, Liebeck. Brigantine Beach, in September—Hamilton. Newark.
- A. carbonarius, Say.**
Generally distributed, not rare—Wenzel. Atlantic City, moderately abundant—Liebeck.
- A. interpunctatus, Kirby.**
Generally distributed, not common—Wenzel.
- A. harrisii, Lec.**
Sea-shore, rare—Liebeck.
- A. agricola, Say.**
Generally distributed, not common—Wenzel. New Brunswick, rare—Smith.
- A. melanopus, Hald.**
Generally distributed, moderately abundant—Liebeck.
- A. nigerrimus, Dej.**
Brigantine Beach, in September—Hamilton.
- A. discoideus, Dej.**
Sea-shore, rare—Liebeck, Wenzel. Gloucester, rare—Wenzel.
- A. baltimorensis, Say.**
Generally distributed, common—Wenzel, Liebeck. Newark. Caldwell, common—Crane. Occurs everywhere in the State—Smith.
- A. verticalis, Lec.**
Anglesea, in August—Smith.
- A. piceus, Men.**
Brigantine Beach, in September—Hamilton.
- A. terminatus, Say.**
Generally distributed, rather common—Wenzel. Sea shore, moderately abundant—Liebeck. Brigantine Beach, in September—Hamilton.
- A. nitidipennis, Lec.**
Newark—Bischoff.

- A. lætus*, Dej.
Brigantine Beach, in September, very rare—Hamilton. Atlantic county, rare—Wenzel.
- A. cœnus*, Say.
Atlantic City, rare—Liebeck. Newark—rare.
- A. lugubris*, Dej.
Generally distributed, common—Wenzel. Gloucester, rare—Liebeck.
- A. sericeus*, Harris.
Gloucester, rare—Liebeck. Newark, rare—Smith.
- A. interstitialis*, Say.
Generally distributed, moderately common—Wenzel, Liebeck. Newark. Madison.
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Family HALIPLIDÆ.

HALIPLUS, Latr.

- H. fasciatus*, Aubé.
Camden and Gloucester counties—Wenzel. Camden, rare—Liebeck. New Jersey—Collection Roberts and United States National Museum.
- H. punctatus*, Aubé.
New Jersey—Collection United States National Museum.
- H. triopsis*, Say.
New Jersey—Collection Roberts.
- H. ruficollis*, De G.
Generally distributed, common—Liebeck, Wenzel. New Jersey—Collection United States National Museum and Roberts.

ONEMIDOTUS, Er.

- O. 12-punctatus*, Say.
Generally distributed, common—Wenzel. Camden, moderately abundant—Liebeck. New Jersey—Collection Roberts and United States National Museum. Madison.
- O. edentulus*, Lec.
New Jersey—Collection Roberts.

Family DYTISCIDÆ.

CANTHYDRUS, Sharp.

C. bicolor, Say.

Anglesea—Wenzel.

HYDROCANTHUS, Say.

H. iricolor, Say.

Generally distributed, rather common—Liebeck. Newark.
New Jersey—Collection United States National Museum.

LACCOPHILUS, Leach.

L. maculosus, Germ.

Generally distributed, moderately abundant—Liebeck. Caldwell, common—Crane. Newark. Madison. New Jersey—Collection Roberts and United States National Museum.

L. proximus, Say.

New Jersey—Collection United States National Museum.

L. fasciatus, Aubé.

Generally distributed, moderately abundant—Liebeck. New Jersey—Collection Roberts and United States National Museum.

L. undatus, Aubé.

New Jersey—Collection Roberts and United States National Museum.

HYDROVATUS, Mots.

H. cuspidatus, Germ.

Camden, rare—Liebeck.

H. pustulatus, Melsh.

New Jersey—Collection Roberts and United States National Museum.

DESMOPACHRIA, Bab.

D. convexa, Aubé.

Camden, rare—Liebeck. New Jersey—Collection Roberts.

BIDESSUS, Sharp.**B. affinis, Say.**

Generally distributed, moderately abundant—Liebeck. New Jersey—Collection Roberts and United States National Museum.

B. granarius, Aubé.

New Jersey—Collection United States National Museum.

OCELAMBUS, Thom.**C. inæqualis, Fabr.**

New Jersey—Collection United States National Museum.

C. punctatus, Say.

Generally distributed, common—Liebeck. New Jersey—Collection Roberts.

C. nubilus, Lec.

Generally distributed, moderately abundant—Liebeck. New Jersey—Collection Roberts.

C. impressopunctatus, Sch.

Sea-shore, rare—Liebeck. New Jersey—Collection Roberts.
Generally distributed, not uncommon—Wenzel.

DERONECTES, Sharp.**D. griseostriatus, De G.**

New Jersey—Collection United States National Museum.

HYDROPORUS, Clairv.**H. concinnus, Lec.**

New Jersey—Roberts.

H. pulcher, Lec.

New Jersey—Collection United States National Museum.

H. integer, Sharp.

New Jersey—Roberts.

H. undulatus, Say.

Newark. New Jersey—Collection Roberts and United States National Museum. Madison.

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H. consimilis, Lec.

New Jersey—Collection United States National Museum.

H. obscurus, Sturm.

Generally distributed, moderately abundant—Liebeck.

H. tenebrosus, Lec.

New Jersey—Collection United States National Museum.

H. americanus, Aubé.

New Jersey—Collection United States National Museum.

H. dichrous, Melsh.

New Jersey—Collection United States National Museum.

H. modestus, Aubé.

New Jersey—Collection Roberts and United States National Museum.

H. stagnalis, G. & H.

New Jersey—Collection United States National Museum.

ILYBIUS, Er.

I. biguttulus, Gem.

Generally distributed, moderately abundant—Liebeck. New Jersey—Collection Roberts and United States National Museum. Madison.

COPTOTOMUS, Say.

C. interrogatus, Fabr.

Caldwell, common—Crane. Sea-shore, moderately abundant—Liebeck. Madison. New Jersey—Collection Roberts and United States National Museum.

COPELATUS, Er.

C. glyphicus, Say.

Generally distributed, moderately abundant—Liebeck. Brigantine Beach, in September—Hamilton. New Jersey—Collection Roberts and United States National Museum.

MATUS, Aubé.

M. bicarinatus, Say.

New Jersey—Collection Roberts and United States National Museum.

AGABUS, Leach.**A. seriatus, Say.**

New Jersey—Collection Roberts and United States National Museum.

A. obtusatus, Say.

New Jersey—Collection Roberts.

A. punctatus, Melsh.

New Jersey—Collection United States National Museum.

A. tæniolatus, Harr.

New Jersey, exact locality unknown, rare—Liebeck.

A. disintegratus, Cr.

Generally distributed, moderately abundant—Liebeck. Newark. New Jersey—Collection Roberts and United States National Museum.

A. erythropterus, Say.

New Jersey—Collection Roberts and United States National Museum.

A. gagates, Aubé.

Fort Lee, common—Linell. New Jersey—Collection Roberts.

A. clavatus, Lec.

Camden and Gloucester counties—Wenzel.

RHANTUS, Esch.**R. binotatus, Harr.**

Newark.

R. calidus, Fabr.

Camden and Gloucester counties, not common—Wenzel.

R. bistriatus, Bergst.

Camden, Gloucester and Atlantic counties, not common—Wenzel.

COLYMBETES, Clairv.**C. sculptilis, Harr.**

Caldwell, rare—Crane. Newark. New Jersey—Collection Roberts and United States National Museum.

HYDATICUS, Leach.

H. piceus, Lec.

Very rare, one specimen only; Caldwell—Crane.

H. bimarginatus, Say.

Anglesea, rare—Liebeck.

DYTISCUS, Linn.

D. harrisii, Kirby,

Caldwell, common—Crane.

D. fasciventris, Say.

Camden, Gloucester and Atlantic counties—Wenzel. Caldwell, rare—Crane. New Jersey—Collection Roberts and United States National Museum. Madison.

D. hybridus, Aubé.

New Jersey—Collection Roberts and United States National Museum.

D. verticalis, Say.

New Jersey—Collection United States National Museum. Madison.

ACILIUS, Leach.

A. semisulcatus, Aubé.

Caldwell, common—Crane. Newark. New Jersey—Collection United States National Museum.

A. fraternus, Harr.

Anglesea, rare—Liebeck. New Jersey—Collection Roberts and United States National Museum. Madison.

A. mediatus, Say.

Sea-shore, rare—Liebeck. Camden, Gloucester and Atlantic counties—Wenzel. New Jersey—Collection Roberts and United States National Museum. Fort Lee, abundant—Linell.

THERMONECTES, Esch.

T. basilaris, Harr.

Generally distributed, moderately abundant—Liebeck. New Jersey—Collection Roberts and United States National Museum.

GRAPHODERUS, Esch.**G. liberus**, Say.

Madison. New Jersey—Collection Roberts and United States National Museum.

G. fasciaticollis, Harr.

New Jersey—Collection United States National Museum.

CYBISTER, Curt.**C. fimbriolatus**, Say.

Caldwell, rare—Crane. New Jersey—Collection Roberts and United States National Museum.

Family GYRINIDÆ.**GYRINUS, Linn.****G. rockinghamensis**, Lec.

Atlantic county, common—Wenzel. Atco, common—Liebeck.

G. limbatus, Say.

Atco, Egg Harbor, moderately abundant—Liebeck.

G. dichrous, Lec.

New Jersey—Collection Roberts and United States National Museum.

G. ventralis, Kirby.

Generally distributed, moderately abundant—Liebeck. New Jersey—Collection United States National Museum.

G. affinis, Aubé.

New Jersey—Collection United States National Museum.

G. analis, Say.

Atlantic county, common—Wenzel.

G. borealis, Aubé.

Atlantic county, common—Wenzel. New Jersey—Collection Roberts and United States National Museum. Madison.

G. lugens, Lec.

Atco, rare—Liebeck.

DINEUTES, MacL.

D. vittatus, Germ.

Generally distributed, moderately abundant—Liebeck. Atlantic county, common—Wenzel. Newark. Clifton, Ocean county, in ditches and small streams, never in ponds—Smith.

D. discolor, Aubé.

Ocean county, common—Smith. New Jersey—Collection Roberts and United States National Museum.

D. assimilis, Aubé.

Generally distributed, moderately abundant—Liebeck. Atlantic county, common—Wenzel. Clifton, Ocean county, common—Smith. New Jersey—Collection Roberts and United States National Museum.

D. emarginatus, Say.

Generally distributed, moderately abundant—Liebeck.

Family HYDROPHILIDÆ.

HELOPHORUS, Fabr.

H. lacustris, Lec.

Hoboken, common—Linell. Palisades, common—Smith.

H. lineatus, Say.

Generally distributed, common—Liebeck. Newark. New Jersey—Collection United States National Museum.

H. tuberculatus, Gyll.

Westville, rare—Liebeck.

HYDROCHUS, Leach.

H. scabratus, Muls.

Generally distributed, common—Liebeck. Newark. New Jersey—Collection United States National Museum.

H. inæqualis, Lec.

New Jersey—Collection United States National Museum.

H. subcupreus, Rand.

New Jersey—Collection Roberts and United States National Museum.

H. variolatus, Lec.

Camden, moderately abundant—Liebeck.

OCHTHEBIUS, Leach,**O. benefossus**, Lec.

New Jersey—Collection Horn.

HYDRÆNA, Kug.**H. pennsylvanica**, Kies.

New Jersey—Collection Roberts and United States National Museum.

HYDROPHILUS, Geoffr.**H. ovatus**, G. & H.

Newark ; rare.

H. triangularis, Say.

Generally distributed, common—Liebeck. Camden and Gloucester counties, common—Wenzel. Newark ; common. Caldwell, common—Crane.

H. nimbatus, Say.

Generally distributed, common—Liebeck. Newark. New Jersey—Collection Roberts and United States National Museum.

H. mixtus, Lec.

Generally distributed, moderately abundant—Liebeck. Madison.

H. glaber, Hbst.

Brigantine Beach, in September—Hamilton. Along Palisades, common—Smith. Caldwell, rare—Crane. New Jersey—Collection Roberts and United States National Museum.

HYDROCHARIS, Latr.**H. obtusatus**, Say.

Generally distributed, rare—Liebeck. Camden and Gloucester counties, common—Wenzel. Newark. Madison. New Jersey—Collection Roberts and United States National Museum.

BEROSUS, Leach.

B. pantherinus, Lec.

New Jersey—Collection Roberts.

B. peregrinus, Hbst.

Generally distributed, moderately abundant—Liebeck. New Jersey—Collection Horn and United States National Museum.

B. striatus, Say.

Generally distributed, moderately abundant—Liebeck. Camden and Gloucester counties, common—Wenzel. Caldwell, common—Crane. New Jersey—Collection Roberts and United States National Museum. Madison.

LACCOBIUS, Er.

L. agilis, Rand.

Westville, rare—Liebeck. New Jersey—Collection Roberts and United States National Museum.

PHILEYDRUS, Sol.

P. nebulosus, Say.

New Jersey—Collection United States National Museum.

P. bifidus, Lec.

New Jersey—Collection Horn and United States National Museum.

P. ochraceus, Mels.

Camden and Gloucester counties, common—Wenzel. Brigantine Beach, in September, common in fresh-water pools—Hamilton. New Jersey—Collection United States National Museum.

P. reflexipennis, Zimm.

Brigantine Beach, in September, common in fresh-water pools—Hamilton. New Jersey—Collection Roberts.

P. cinctus, Say.

Generally distributed, moderately abundant—Liebeck. Newark. New Jersey—Collection Roberts and United States National Museum.

P. diffusus, Say.

New Jersey—Collection United States National Museum.

P. perplexus, Lec.

Brigantine Beach, in September, in fresh-water pools—Hamilton. New Jersey—Collection Roberts and United States National Museum.

P. hamiltoni, Horn.

Brigantine Beach, in September—Hamilton.

HYDROCOMBUS, Sharp.

H. fimbriatus, Melsh.

Camden and Gloucester counties, common—Wenzel. New Jersey—Collection Roberts and United States National Museum.

H. lacustris, Lec.

Sea-shore, common—Liebeck. Hoboken, common—Linell.

H. rotundatus, Say.

Caldwell, rare—Crane.

HYDROBIUS, Leach.

H. globosus, Say.

Westville, rare—Liebeck. Caldwell, rare—Crane. Newark. New Jersey—Collection Roberts and United States National Museum.

H. fuscipes, Linn.

Camden and Gloucester counties—Wenzel. New Jersey—Collection Roberts and United States National Museum.

H. subcupreus, Say.

Generally distributed, common—Liebeck. Brigantine Beach, in September—Hamilton. New Jersey—Collection Roberts and United States National Museum.

H. suturalis, Lec.

Brigantine Beach, in September—Hamilton.

CEROYON, Leach.

C. centromaculatum, Sturm.

Orange Mountains, rare—Smith.

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C. prætextatum, Say.

Generally distributed, moderately abundant—Liebeck. Brigantine Beach, in September—Hamilton. New Jersey—Collection Roberts and United States National Museum.

C. ocellatum, Say.

Generally distributed, moderately abundant—Liebeck. New Jersey—Collection United States National Museum.

C. pygmæum, Ill.

New Jersey—Collection United States National Museum.

C. unipunctatum, Linn.

Generally distributed, moderately common—Liebeck.

C. anale, Payk.

Camden, rare—Liebeck. New Jersey—Collection United States National Museum. Ocean county, cranberry bogs, common—Smith.

There are a number of unnamed species in collections, which will probably add a few to the above list.

PHENONOTUM, Sharp.

P. extriatum, Say.

Brigantine Beach, in September—Hamilton.

Family SILPHIDÆ.

NECROPHORUS, Fabr.

N. americana, Oliv.

Generally distributed, not rare—Wenzel. Westville, rare—Liebeck. Caldwell, common—Crane. Newark. Hudson county—Linell.* Madison.

N. sayi, Lap.

Hudson county—Linell.

* Mr. Linell's collecting was done very largely along the Palisades to Fort Lee, in the marshes back of Hoboken, and at Snake Hill and its immediate vicinity. This is particularly so in the Staphylinide families.

N. orbicollis, Say.

Generally distributed, not rare—Wenzel. Westville, rare—Liebeck. Caldwell, common—Crane. Newark. Hudson county—Linell. Madison.

N. marginatus, Fabr.

Generally distributed, common—Wenzel, Liebeck. Hudson county—Linell. Caldwell, common—Crane. Madison.

N. guttula, Mots.

Hudson county—Linell.

N. tomentosus, Weber.

Generally distributed, common—Wenzel, Liebeck. Hudson county—Linell. Caldwell, common—Crane. Newark.

N. vespilloides, Hbst.

Caldwell, common—Crane.

SILPHA, Linn.

S. surinamensis, Fabr.

Generally distributed, common—Wenzel, Liebeck. Caldwell, common—Crane. Hudson county—Linell. Newark.

S. lapponica, Hbst.

Newark; not common.

S. inæqualis, Fabr.

Generally distributed, not rare—Wenzel. Westville, rare—Liebeck. Caldwell, common—Crane. Hudson county—Linell. Newark. Madison.

S. noveboracensis, Först.

Generally distributed, common—Wenzel. Westville, rare—Liebeck. Caldwell, common—Crane. Hudson county—Linell. Newark. Madison.

S. americana, Linn.

Generally distributed, not rare—Wenzel. Camden, rare—Liebeck. Caldwell, common—Crane. Hudson county—Linell. Newark. Madison.

CHOLEVA, Latr.

C. simplex, Say.

In ants' nests, near Newark, rare—Bischoff.

C. basillaris, Say.

Hudson county—Linell.

C. clavicornis, Lec.

In ants' nests, near Newark—Bischoff.

C. terminans, Lec.

Anglesea, in July—Schwarz.

PRIONOCHÆTA, Horn.

P. opaca, Say.

Anglesea, in July—Schwarz. Hudson county—Linell.

PTOMOPHAGUS, Ill.

P. parasitus, Lec.

Hudson county—Linell.

LIODES, Latr.

L. discolor, Melsh.

Hudson county—Linell.

AGATHIDIUM, Ill.

A. oniscoides, Beauv.

Snake Hill, abundant on fallen trees—Linell.

A. exiguum, Melsh.

Hudson county—Linell. Generally distributed, rare—Liebeck.

Family SCYDMÆNIDÆ.

SCYDMÆNUS, Latr.

S. perforatus, Schaum.

Camden county, not common—Wenzel.

S. fossiger, Lec.

Camden, moderately abundant—Liebeck. Hudson county—Linell.

S. capillosulus, Lec.

Ocean county, cranberry bogs, rare—Smith.

S. brevicornis, Say.

Ocean county, cranberry bogs, in May, rare—Smith.

S. obscurellus, Lec.

Ocean county, cranberry bogs, in May, rare—Smith.

S. clavipes, Say.

Camden, rare—Liebeck. Hudson county—Linell. Newark.

S. salinator, Lec.

Hudson county—Linell. Under stones and sticks in salt marshes, not rare—Smith.

S. bicolor, Lec.

Camden county, not common—Wenzel.

BRATHINUS, Lec.

B. nitidus, Lec.

Fort Lee, near running brooks, rare—Linell.

Family PSELAPHIDÆ.

CEDIUS, Lec.

C. ziegléri, Lec.

Hudson county—Linell. Newark; rare.

CTENISTES, Reichenb.

C. piceus, Lec.

Camden, not rare—Liebeck. Hudson county—Linell.

TYRUS, Aubé.

T. humeralis, Aubé.

Westville, rare—Liebeck.

PSELAPHUS, Hbst.

P. erichsonii, Lec.

Recorded on the Newark list.

DECARTHERON, Brend.

D. abnorme, Lec.

Camden, not rare—Liebeck.

BATRISUS, Aubé.

B. monstrosus, Lec.

Hudson county—Linell. Ocean county, on cranberry bogs,
in May—Smith.

B. ferox, Lec.

Camden, not rare—Liebeck.

B. riparius, Say.

Anglesea, in July, not common—Schwarz.

B. globosus, Lec.

Westville, rare—Liebeck.

BRYAXIS, Leach.

B. brendelii, Horn.

Ocean county, common on cranberry bogs, in May—Smith.

B. rubicunda, Aubé.

Camden, not rare—Liebeck. Hudson county—Linell.

B. puncticollis, Lec.

Ocean county, common on cranberry bogs, in May—Smith.

TRIMIUM, Aubé

T. dubium, Lec.

Ocean county, not uncommon on cranberry bogs, in May—
Smith.

Family STAPHYLINIDÆ.

FALAGRIA, Mann.

F. cingulata, Lec.

New Jersey—Collection United States National Museum.

F. dissecta, Er.

New Jersey—Collection United States National Museum.

F. venustula, Er.

New Jersey—Collection United States National Museum.

HOMALOTA, Mann.**H. plana**, Gyll.

New Jersey—Collection United States National Museum.

H. trimaculata, Er.

New Jersey—Collection United States National Museum.

H. lividipennis, Mann.

New Jersey—Collection United States National Museum.

Three species at Anglesea, in July—Schwarz; and there are many unnamed and unnamable species in collections generally.

LOMECHUSA, Grav.**L. cava**, Lec.

Snake Hill, occurs in the nest of a large red ant—Linell.

TACHYUSA, Er.**T. cavicollis**, Lec.

New Jersey—Collection United States National Museum.

T. nigrella, Lec.

New Jersey—Collection United States National Museum.

POLYSTOMA, Steph.**P. maritima**, Casey.

Brigantine Beach, in September—Hamilton. Cape May, in July—Schwarz.

ALEOCHARA, Grav.**A. lata**, Grav.

Generally distributed, common—Wenzel. New Jersey—Collection United States National Museum.

A. brachypterus, Fourc.

New Jersey—Collection United States National Museum.

A. bimaculata, Grav.

Brigantine Beach, in September—Hamilton. New Jersey—Collection United States National Museum.

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A. nitida, Grav.

New Jersey—Collection United States National Museum.

OXYPODA, Mann.

O. sagulata, Er.

New Jersey—Collection United States National Museum.

GYROPHÆNA, Mann.

G. vinula, Er.

New Jersey—Collection United States National Museum.

MYLLÆNA, Er.

M. rufipennis.

Anglesea, in July—Schwarz.

ACYLOPHORUS, Nordm.

A. pronus, Er.

Snake Hill, Palisades, excessively common—Linell. Madison.

HETEROTHOPS, Steph.

H. fumigatus, Lec.

New Jersey—Collection United States National Museum.

QUEDIUS, Steph.

Q. fulgidus, Fabr.

Hudson county—Linell. Caldwell, common—Crane. New Jersey—Collection United States National Museum.

Q. peregrinus, Grav.

New Jersey—Collection Horn and United States National Museum. Newark.

Q. capucinus, Grav.

Hudson county—Linell. New Jersey—Collection Horn and United States National Museum.

Q. lævigatus, Gyll.

Brigantine Beach, mainland, in September—Hamilton. Hudson county, rare—Linell.

Q. molochinus, Grav.

Hudson county—Linell. New Jersey—Collection United States National Museum.

Q. brunneipennis, Mann.

Brigantine Beach, in September, not uncommon—Hamilton.

Q. ferox, Lec.

Hudson county, rare—Linell.

Q. vernix, Lec.

Hudson county, rare—Linell. New Jersey—Collection United States National Museum. Newark.

LISTOTROPHUS, Perty.**L. cingulatus**, Grav.

Generally distributed, common—Wenzel. Hudson county—Linell. Caldwell, common—Crane. Newark. Madison.

L. capitatus, Bland.

New Jersey—Collection United States National Museum.

CREOPHILUS, Kirby.**C. villosus**, Grav.

Generally distributed, common—Wenzel. Brigantine Beach, in September—Hamilton. Caldwell, common—Crane. Hudson county—Linell. Newark. Madison.

STAPHYLINUS, Linn.**S. vulpinus**, Nordm.

Brigantine Beach, in September, not common—Hamilton. Caldwell, rare—Crane. Hudson county—Linell. New Jersey—Collection United States National Museum.

S. maculosus, Grav.

Generally distributed, common—Wenzel. Caldwell, common—Crane. Hudson county—Linell. Newark. Madison. I have taken it throughout the State, quite commonly.

S. mysticus, Er.

Generally distributed, not rare—Wenzel. Hudson county—Linell. Madison. New Jersey—Collection United States National Museum.

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S. tomentosus, Grav.

Brigantine Beach, in September, rare—Hamilton. Hudson county—Linell. Newark. New Jersey—Collection United States National Museum.

S. fossator, Grav.

Generally distributed, not rare—Wenzel. Brigantine Beach, mainland, in September—Hamilton. New Jersey—Collection United States National Museum.

S. cinnamopterus, Grav.

Generally distributed, common—Wenzel. Hudson county, abundant—Linell. Caldwell, common—Crane. Newark. Madison.

S. violaceus, Grav.

Generally distributed, not common—Wenzel. Madison. New Jersey—Collection United States National Museum.

S. prælongus, Mann.

Brigantine Beach, in September, common—Hamilton. Anglesea, in July—Schwarz. Hudson county—Linell.

OOYPUS, Kirby.

O. ater, Grav.

Generally distributed, common—Wenzel. Brigantine Beach, in September, occasional—Hamilton. Caldwell, common—Crane. Hudson county—Linell.

BELONUOHUS, Nordm.

B. formosus, Grav.

Generally distributed, not common—Wenzel. Hudson county—Linell. Newark. New Jersey—Collection United States National Museum.

PHILONTHUS, Curt.

P. æneus, Rossi.

Brigantine Beach, in September, frequent—Hamilton. Hudson county—Linell. Caldwell, common—Crane. Newark. New Jersey—Collection United States National Museum.

P. sericinus, Horn.

Hudson county, rare—Linell. New Jersey—Collection United States National Museum. Newark.

P. umbratilis, Grav.

New Jersey—Collection Horn, one specimen.

P. lætulus, Say.

New Jersey—Collection United States National Museum.

P. hepaticus, Er.

Brigantine Beach, in September, frequent—Hamilton. Hudson county—Linell. New Jersey—Collection United States National Museum.

P. umbrinus, Grav.

Brigantine Beach, in September, very rare—Hamilton. Hudson county, rare—Linell. New Jersey—Collection Horn.

P. quadricollis, Horn.

Newark.

P. debilis, Grav.

New Jersey—Collection United States National Museum.

P. varians, Payk.

New Jersey—Collection United States National Museum.

P. longicornis, Steph.

Hudson county—Linell. New Jersey—Collection United States National Museum.

P. discoideus, Grav.

Hudson county—Linell. New Jersey—Collection United States National Museum.

P. alumnus, Er.

Palisades and Snake Hill, very common, in spring—Linell. Brigantine Beach, in September, rare—Hamilton. Anglesea, in July—Schwarz. New Jersey—Collection United States National Museum.

P. fusiformis, Melsh.

Brigantine Beach, in September, common—Hamilton.

P. schwarzi, Horn.

Snake Hill, one specimen—Linell. Newark.

P. micans, Grav.

Brigantine Beach, in September, frequent—Hamilton.

P. lomatus, Er.

Generally distributed, common—Wenzel. Brigantine Beach, in September, common—Hamilton. Palisades and Snake Hill, early in spring, common—Linell.

P. brunneus, Grav.

Hudson county—Linell. Anglesea, in July—Schwarz. New Jersey—Collection United States National Museum.

P. cyanipennis, Fabr.

Generally distributed, common—Wenzel. Brigantine Beach, mainland, in September—Hamilton. Hudson county—Linell. Newark.

P. blandus, Grav.

Brigantine Beach, mainland, in September—Hamilton. Hudson county—Linell. New Jersey—Collection United States National Museum. Newark.

P. sordidus, Grav.

Hudson county—Linell.

P. cephalotes, Grav.

Hudson county—Linell.

P. nigrutilus, Grav.

Hudson county—Linell. New Jersey—Collection United States National Museum.

P. microphthalmus, Horn.

Brigantine Beach, in September—Hamilton. Anglesea, in July—Schwarz.

P. baltimorensis, Grav.

Generally distributed, not rare—Wenzel. Hudson county, in rotten wood—Linell. Madison. New Jersey—Collection United States National Museum.

P. apicalis, Say.

Camden and Gloucester counties, not common—Wenzel. Caldwell, rare—Crane.

ACTOBIUS, Steph.**A. cinerascens, Grav.**

Hudson county—Linell. New Jersey—Collection United States National Museum.

A. nanus, Horn.

Hudson county—Linell. New Jersey—Collection Horn.

A. sobrinus, Er.

Generally distributed, not rare—Wenzel. Hudson county—Linell. New Jersey—Collection United States National Museum.

A. parvus, Horn.

Hudson county—Linell.

A. pæderoides, Lec.

Brigantine Beach, in September, frequent—Hamilton. Hudson county—Linell. New Jersey—Collection United States National Museum.

CAFIUS, Steph.**C. bistriatus, Er.**

Brigantine Beach, in September, abundant—Hamilton. Anglesea, Cape May, in July—Schwarz.

XANTHOLINUS, Serv.**X. cephalus, Say.**

Generally distributed, common—Wenzel. Fort Lee, abundant under leaves in the woods—Linell. Brigantine Beach, in September, frequent—Hamilton.

X. obsidianus, Melsh.

Generally distributed—Wenzel. New Jersey—Collection United States National Museum.

X. æmmesus, Grav.

Hudson county—Linell. New Jersey—Collection United States National Museum.

X. obscurus, Er.

Brigantine Beach, in September, frequent—Hamilton. Anglesea, in July—Schwarz. Hudson county—Linell.

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X. sanguinipennis, Lec.

Anglesea and Cape May, in July—Schwarz. Hudson county,
rare—Linell.

X. pusillus, Sachse.

Hudson county—Linell.

X. hamatus, Say.

Hudson county—Linell.

LEPTACINUS, Er.

L. batychrus, Gyll.

New Jersey—Collection United States National Museum.

DIOCHUS, Er.

D. schaumii, Kraatz.

Camden and Gloucester counties, not rare—Wenzel. Hudson
county—Linell. New Jersey—Collection United States National
Museum.

STENUS, Latr.

S. bipunctatus, Er.

New Jersey—Collection United States National Museum.

S. juno, Fabr.

Palisades, Snake Hill, common in spring—Linell. New Jer-
sey—Collection United States National Museum.

S. femoratus, Say.

Hudson county—Linell. New Jersey—Collection United
States National Museum.

S. colonus, Er.

New Jersey—Collection United States National Museum.

S. stygicus, Say.

New Jersey—Collection United States National Museum.

S. sectilifer, Casey.

Anglesea, in July—Schwarz.

S. flavicornis, Er.

Palisades and Snake Hill, in spring, abundant—Linell. New
Jersey—Collection United States National Museum.

S. annularis, Er.

With the preceding and equally abundant ; same authorities.

S. reconditus, Casey.

New Jersey—Collection United States National Museum.

S. arculus, Er.

Anglesea, in July—Schwarz.

S. punctatus, Er.

Hudson county—Linell. New Jersey—Collection United States National Museum.

There will undoubtedly be many additions to this list, when the species now in collections are properly identified.

EUÆSTHETUS, Grav.**E. americanus**, Er.

Generally distributed, common—Wenzel. New Jersey—Collection United States National Museum.

CRYPTOBIUM, Mann.**C. badium**, Grav.

Snake Hill, abundant—Linell. New Jersey—Collection United States National Museum.

C. lugubre, Lec.

Brigantine Beach, in September, occasional—Hamilton.

C. bicolor, Grav.

Hudson county—Linell. Madison. Ocean county, on cranberry bogs, in May, not common—Smith.

C. pallipes, Grav.

Generally distributed, common—Wenzel. Hudson county—Linell. New Jersey—Collection United States National Museum. Ocean county, common on cranberry bogs, in May—Smith.

C. latebricola, Nordm.

Brigantine Beach, in September, occasional—Hamilton. Ocean county, common on cranberry bogs, in May—Smith.

C. cribratum, Lec.

Hudson county, rare—Linell. Madison.

LATHROBIUM, Grav.

L. grande, Lec.

New Jersey—Collection United States National Museum.

L. punctulatum, Lec.

Anglesea, in July—Schwarz. Hudson county—Linell. New Jersey—Collection United States National Museum.

L. armatum, Say.

Recorded on the Newark list.

L. simile, Lec.

Hudson county—Linell.

L. seriatum, Lec.

Brigantine Beach, in September, rare—Hamilton.

L. longiusculum, Grav.

Brigantine Beach, in September, common—Hamilton. Hudson county—Linell. Newark.

L. collare, Er.

New Jersey—Collection United States National Museum.

L. dimidiatum, Say.

Brigantine Beach, in September, rare—Hamilton.

STILICUS, Latr.

S. opaculus, Lec.

New Jersey—Collection United States National Museum.

S. angularis, Lec.

Anglesea, in July—Schwarz. Generally distributed—Wenzel. Hudson county—Linell.

S. biarmatus, Lec.

Newark.

MEGASTILICUS, Casey.

M. formicarius, Casey.

Near Newark, in ant hills; not rare.

LITHOCHARIS, Er.

L. corticina, Grav.

Generally distributed, not rare—Wenzel. New Jersey—Collection United States National Museum.

L. confluens, Say.

Camden and Gloucester counties—Wenzel. Hudson county—Linell. New Jersey—Collection United States National Museum. Madison.

PÆDERUS, Grav.**P. littorarius**, Grav.

Brigantine Beach, in September, abundant—Hamilton. Hudson county—Linell. Newark. Camden and Gloucester counties—Wenzel. Madison.

P. oblitteratus, Lec.

Brigantine Beach, in September, less common—Hamilton.

SUNIUS, Steph.**S. prolixus**, Er.

Brigantine Beach, in September, common—Hamilton. Newark.

S. longiusculus, Mann.

Gloucester and Camden counties, common—Wenzel. Hudson county—Linell. New Jersey—Collection United States National Museum.

PALAMINUS, Er.**P. normalis**, Lec.

Anglesea, in July—Schwarz.

TACHINUS, Grav.**T. memnonius**, Grav.

New Jersey—Collection United States National Museum.

T. repandus, Horn.

New Jersey—Collection United States National Museum.

T. flavipennis, Dej.

New Jersey—Collection United States National Museum.

T. fimbriatus, Grav.

Brigantine Beach, mainland, in September—Hamilton. Camden and Gloucester counties, rather common—Wenzel. New Jersey—Collection United States National Museum.

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T. limbatus, Melsh.

New Jersey—Collection United States National Museum.

T. pallipes, Grav.

Camden and Gloucester counties, common—Wenzel. New Jersey—Collection United States National Museum.

TACHYPORUS, Grav.

T. jocosus, Say.

Camden and Gloucester counties, common—Wenzel. New Jersey—Collection United States National Museum.

T. chrysomelinus, Linn.

Brigantine Beach, in September—Hamilton. New Jersey—Collection United States National Museum.

T. brunneus, Er.

Camden and Gloucester counties, common—Wenzel. New Jersey—Collection United States National Museum.

ERCHOMUS, Mots.

E. ventriculus, Say.

Brigantine Beach, mainland, in September—Hamilton. Camden and Gloucester counties, common—Wenzel. Newark. New Jersey—Collection United States National Museum.

CONOSOMA, Kraatz.

C. crassum, Grav.

Generally distributed, common—Wenzel. New Jersey—Collection United States National Museum.

C. pubescens, Payk.

Camden and Gloucester counties, common—Wenzel. New Jersey—Collection United States National Museum. Madison.

C. basale, Er.

New Jersey—Collection United States National Museum.

C. opicum, Say.

Ocean county, under bark—Smith.

BOLETOBIUS, Leach.

B. cingulatus, Mann.

Newark.

B. intrusus, Horn.

Brigantine Beach, mainland, in September—Hamilton. New Jersey—Collection United States National Museum.

B. cincticollis, Say.

New Jersey—Collection United States National Museum.

B. anticus, Horn.

New Jersey—Collection United States National Museum.

B. pygmæus, Fabr.

Brigantine Beach, mainland, in September—Hamilton.

B. trinotatus, Er.

Anglesea, in July—Schwarz. Brigantine Beach, mainland, in September—Hamilton. New Jersey—Collection United States National Museum.

B. cinctus, Grav.

Generally distributed, common—Wenzel. New Jersey—Collection United States National Museum.

Var. gentilis, Lec.

Brigantine Beach, mainland, in September—Hamilton.

BRYOPORUS, Kraatz.

B. rufescens, Lec.

New Jersey—Collection United States National Museum.

MYCETOPORUS, Mann.

M. americanus, Er.

Anglesea, in July—Schwarz. New Jersey—Collection United States National Museum.

OXYPORUS, Fabr.

O. femoralis, Grav.

Camden and Gloucester counties, common—Wenzel. New Jersey—Collection United States National Museum.

O. major, Grav.

Camden and Gloucester counties, not rare—Wenzel. New Jersey—Collection United States National Museum.

O. vittatus, Grav.

New Jersey—Collection United States National Museum.

O. lateralis, Grav.

Camden and Gloucester counties, not rare—Wenzel. New Jersey—Collection United States National Museum.

BLEDIUS, Leach.

B. pallipennis, Er.

Recorded on the Newark list.

B. mandibularis, Er.

Brigantine Beach, salt marshes, September, common—Hamilton.

B. brevidens, Lec.

Atlantic county—Wenzel.

B. politus, Er.

Brigantine Beach, salt marshes, September, frequent—Hamilton.

B. basalis, Lec.

Brigantine Beach, in September, salt marshes, common—Hamilton. Anglesea, in July—Schwarz. New Jersey—Collection United States National Museum.

B. cordatus, Say.

Brigantine Beach, common in salt marshes, September—Hamilton.

PLATYSTETHUS, Mann.

P. americanus, Er.

Brigantine Beach, common, September—Hamilton. New Jersey—Collection United States National Museum.

OXYTELUS, Grav.

O. rugosus, Grav.

New Jersey—Collection United States National Museum.

O. pennsylvanicus, Er.

New Jersey—Collection United States National Museum.

O. insignitus, Grav.

Brigantine Beach, September—Hamilton. New Jersey—Collection United States National Museum.

O. nitidulus, Grav.

New Jersey—Collection United States National Museum.

O. exiguus, Er.

Anglesea, in July—Schwarz.

TROGOPHLEUS, Mann.**T. simplarius, Lec.**

Anglesea, in July—Schwarz.

T. arcifer, Lec.

New Jersey—Collection United States National Museum.

T. 4-punctatus, Say.

Camden and Gloucester counties—Wenzel. New Jersey—Collection United States National Museum.

APOCELLUS, Er.**A. sphæricollis, Say.**

Brigantine Beach, in September—Hamilton. New Jersey—Collection United States National Museum.

GEODROMICUS, Redt.**G. cæsus, Er.**

Gloucester and Camden counties—Wenzel.

OLOPHRUM, Er.**O. obtectum, Er.**

New Jersey—Collection United States National Museum.
Madison. Newark.

HOMALIUM, Grav.**H. rufipes, Grav.**

New Jersey—Collection United States National Museum.

GLYPTOMA, Er.

G. costale, Er.

New Jersey—Collection United States National Museum.

Family TRICHOPTERYGIDÆ.

PTILIUM, Er.

P. hornianum, Math.

Anglesea, in July—Schwarz.

PTENIDIUM, Er.

P. ulkei, Math.

Cape May, in July—Schwarz.

P. atomaroides, Mots.

Cape May, in July—Schwarz.

TRICHOPTERYX, Kirby.

T. haldemanni, Lec.

Anglesea, in July—Schwarz.

Family SCAPHIDIIDÆ.

SCAPHIDIUM, Oliv.

S. quadriguttatum, Say.

Generally distributed, moderately abundant—Liebeck.

S. piceum, Mots.

Generally distributed, moderately abundant—Wenzel, Liebeck.

SCAPHISOMA, Leach.

S. convexum, Say.

Generally distributed, not rare—Liebeck, Wenzel. Newark.

Family PHALACRIDÆ.**PHALACRUS, Payk.**

P. politus, Melsh.

Taken in Ocean county—Smith.

OLIBRUS, Er.

O. lecontei, Casey.

"Atlantic States ; not rare."

O. consimilis, Marsh.

Newark. Generally distributed, not rare—Wenzel.

O. nitidus, Melsh.

Generally distributed, common—Wenzel, Liebeck. Hudson county—Linell.

STILBUS, Seidl.

S. subalutaceus, Casey.

Cape May ; only recorded locality.

LITOCHRUS, Er.

L. immaculatus, Casey.

"New Jersey"—Casey.

Family CORYLOPHIDÆ.**SACIUM, Lec.**

S. amabile, Lec.

Anglesea, in July—Schwarz.

S. fasciatum, Say.

Anglesea, in July—Schwarz. Newark.

S. lunatum, Lec.

Anglesea, in July—Schwarz.

S. nova species, Schwarz dixit.

Anglesea, in July—Schwarz.

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ARTHROLIPS, Woll.

A. marginicollis, Lec.

I have taken this in the State, exact locality unknown—Smith.

CORYLOPHUS, Steph.

O. truncatus, Lec.

Camden and Gloucester counties, not rare—Wenzel.

RHYPOBIUS, Lec.

R. marinus, Lec.

Brigantine Beach, in September, common—Hamilton. Anglesea, in July, common—Schwarz.

ORTHOPERUS, Steph.

O. glaber, Lec.

Camden and Gloucester counties, not common—Wenzel. Anglesea, in July—Schwarz.

O. scutellaris, Lec.

Anglesea, in July—Schwarz.

Family COCCINELLIDÆ.

ANISOSTICTA, Dup.

A. seriata, Melsh.

Sea-shore, not rare—Wenzel. Atlantic City, moderately abundant—Liebeck. Brigantine Beach, in September, frequent—Hamilton. Cape May, in July—Schwarz. New Jersey—Linell.

A. strigata, Thunb.

Hudson county—Linell.

MEGILLA, Muls.

M. maculata, De G.

Generally distributed, common—Wenzel, Liebeck. Brigantine Beach, in September, common—Hamilton. Hudson county,

common—Linell. Caldwell, common—Crane. Newark. Madison. New Brunswick.

HIPPODAMIA, Muls.**H. glacialis, Fabr.**

Generally distributed, common—Wenzel, Liebeck. Hudson county, abundant—Linell. New Brunswick. Ocean county, common—Smith. Caldwell, common—Crane. Newark. Madison.

H. convergens, Guer.

Common throughout the State. Reported as abundant by all observers.

H. 13-punctata, Linn.

Hudson county, not common—Linell. Caldwell, common—Crane.

H. parenthesis, Say.

Occurs throughout the State ; moderately abundant. Reported by all collectors.

COCCINELLA, Linn.**C. affinis, Rand.**

Atlantic county, rare—Wenzel.

C. trifasciata, Linn.

Newark, Madison ; not common.

C. novemnotata, Hbst.

Common throughout the State.

C. sanguinea, Linn.

Common throughout the State.

ADALIA, Muls.**A. bipuncta, Linn.**

Common throughout the State.

HARMONIA, Muls.**H. picta, Rand.**

Gloucester, Dacosta, common—Liebeck. Camden, Gloucester and Atlantic counties, common—Wenzel. Hudson county—Linell. New Brunswick, not common—Smith.

MYSIA, Muls.

M. pullata, Say.

Westville, moderately abundant—Liebeck. Common in spring—Wenzel.

ANATIS, Muls.

A. 15-punctata, Oliv.

Reported from all parts of the State; not rare.

PSYLLOBORA, Muls.

P. 20-maculata, Say.

Common throughout the State.

CHILOCORUS, Leach.

C. bivulnerus, Mels.

Moderately common throughout the State.

EXOCHOMUS, Redt.

E. marginipennis, Lec.

Generally distributed, rare—Wenzel. Dacosta, rare—Liebeck.

E. tripustulata, De G.

Generally distributed, more common on the shore—Wenzel. Atlantic City, rare—Liebeck.

PENTILIA, Muls.

P. misella, Lec.

Anglesea—Wenzel.

BRACHYACANTHA, Chevr.

B. dentipes, Fabr.

Anglesea, rare—Wenzel. Woodbury, rare—Liebeck.

B. ursina, Fabr.

Common throughout the State.

Var. 10-pustulata, Melsh.

With the type; generally less common.

HYPERASPIS, Chevr.

H. fimbriolata, Melsh.

Hudson county—Linell.

H. undulata, Say.

Generally distributed, not rare—Wenzel. Hudson county—
Linell.

H. lewisii, Cr.

Generally distributed, rare—Wenzel.

H. signata, Oliv.

Generally distributed, not rare—Wenzel, Liebeck. Hudson
county—Linell.

H. proba, Say.

Generally distributed, not rare—Wenzel. Hudson county—
Linell.

H. bigeminata, Rand.

Atco, rare—Liebeck.

SCYMNUS, Kug.

S. bioculatus, Muls.

Atco, rare—Liebeck.

S. terminatus, Say.

Generally distributed, not rare—Wenzel.

S. americanus, Muls.

Atco, rare—Liebeck.

S. fraternus, Lec.

Generally distributed, rare—Liebeck.

S. hæmorrhous, Lec.

Generally distributed, not rare—Wenzel.

S. punctatus, Melsh.

Anglesea, in July—Schwarz.

COCCIDULA, Kug.

C. lepida, Lec.

Gloucester; rare.

EPILACHNA, Chevr.

E. borealis, Fabr.

Generally distributed, moderately abundant—Wenzel, Liebeck.
New Brunswick. Newark. Caldwell, common—Crane.

Unlike all others of this family, this species is a leaf-feeder and injurious; all the others are highly beneficial. When more careful collections are made, the number of our species in some genera will be largely increased.

Family ENDOMYCHIDÆ.

RHANIS, Lec.

R. unicolor, Ziegl.

Generally distributed, rare—Liebeck. Camden and Gloucester counties, not common—Wenzel.

LYCOPERDINA, Latr.

L. ferruginea, Lec.

Camden and Gloucester counties, not common—Wenzel.
Gloucester, rare—Liebeck. Hudson county—Linell. Newark.

APHORISTA, Gorb.

A. vittata, Fabr.

Generally distributed, not rare—Wenzel. Gloucester, rare—Liebeck. Caldwell, common—Crane.

MYCETINA, Muls.

M. perpulchra, Newn.

Newark—Bischoff.

M. testacea, Ziegl.

Generally distributed, not common—Wenzel. Sea-shore, rare—Liebeck.

PHYMAPHORA, Newn.

P. pulchella, Newn.

Caldwell, common—Crane. Madison. Newark.

STENOTARSUS, Perty.**S. hispidus**, Hbst.

Atlantic and Cape May counties, not common—Wenzel.
 Atlantic City, Landisville, rare—Liebeck. Newark.

EPIPOCUS, Germ.**E. cinctus**, Lec.

Generally distributed, rare—Wenzel.

ENDOMYCHUS, Panz.**E. biguttatus**, Say.

Generally distributed, not common—Wenzel, Liebeck. Hudson county—Linell.

Family EROTYLIDÆ.**LANGURIA**, Latr.**L. bicolor**, Fabr.

Camden, rare—Wenzel. Westville, sea-shore, rare—Liebeck.
 Brigantine Beach, in September, two specimens—Hamilton.
 Newark.

L. mozardi, Lec.

Generally distributed, rather common—Wenzel, Liebeck.
 Caldwell, common—Crane. Hudson county—Linell. Newark.

L. tædata, Lec.

Sea-shore, not common—Wenzel, Liebeck. Hudson county—
 Linell.

L. angustata, Beauv.

Generally distributed, not rare—Wenzel. Hudson county—
 Linell. Newark.

Var. trifasciata, Say.

Generally distributed, rare—Liebeck. Newark.

L. gracilis, Newn.

Generally distributed, not common—Wenzel. Gloucester,
 rare—Liebeck. Hudson county—Linell.

DAONE, Latr.

D. 4-maculata, Say.

New Jersey, exact locality unknown, rare—Liebeck.

MEGALODAONE, Cr.

M. fasciata, Fabr.

Generally distributed, rather common—Liebeck. Same, except sea-shore—Wenzel. Caldwell, common—Crane. Newark.

ISCHYRUS, Lac.

I. 4-punctatus, Oliv.

Caldwell, common—Crane.

MYCOTRETUS, Lac.

M. pulchra, Say.

Hudson county—Linell.

TRITOMA, Fabr.

T. humeralis, Fabr.

Generally distributed, not common—Liebeck, Wenzel. Brigantine Beach, mainland, in September—Hamilton. Hudson county—Linell.

T. biguttata, Say.

Anglesea, in July—Schwarz. Brigantine Beach, mainland, in September—Hamilton. Hudson county—Linell. Newark.

T. angulata, Say.

Hudson county—Linell. New Jersey—Collection Horn.

T. unicolor, Say.

Generally distributed, not common—Wenzel, Liebeck.

T. thoraciça, Say.

Generally distributed, not rare—Wenzel. Sea-shore, rare—Liebeck. Hudson county—Linell.

T. flavicollis, Lec.

Generally distributed, moderately abundant—Liebeck, Wenzel. Brigantine Beach, mainland, in September—Hamilton. Hudson county—Linell.

Family COLYDIIDÆ.**SYNCHITA, Hellw.**

S. obscura, Horn.

Anglesea, in July—Schwarz.

S. fuliginosa, Melsh.

Hudson county—Linell.

DITOMA, Illig.

D. quadriguttata, Say.

Dacosta, rare—Liebeck. Hudson county—Linell.

COXELUS, Latr.

C. guttulatus, Lec.

Westville, rare—Liebeck.

PENTHELISPA, Pasc.

P. hæmatodes, Fabr.

Anglesea—Wenzel.

AULONIUM, Er.

A. parallelopipedum, Say.

Hudson county, not common—Linell.

COLYDIUM, Fabr.

C. lineola, Say.

Camden and Gloucester counties, rare—Wenzel. Hudson county—Linell.

BOTHRIDERES, Er.

B. geminatus, Say.

Generally distributed, rare—Liebeck.

CHERYLON, Latr.

C. castaneum, Say.

Generally distributed, rare—Wenzel. Hudson county—Linell.

PHILOTHERMUS, Aubé.

P. glabriculus, Lec.

Generally distributed, moderately abundant—Liebeck. Rare—Wenzel. Hudson county—Linell.

Family RHYSSODIDÆ.

CLINIDIUM, Kirby.

C. sculptile, Newn.

Generally distributed, rare—Liebeck. Camden and Gloucester counties, rare—Wenzel.

Family CUCUJIDÆ.

SILVANUS, Latr.

S. surinamensis, Linn.

Generally distributed; often injurious to stored grain. Common in the mangers, in stables.

S. bidentatus, Fabr.

Generally distributed, not rare—Wenzel. Hudson county—Linell.

S. planatus, Germ.

Brigantine Beach, mainland, in September—Hamilton. Hudson county—Linell. Newark.

S. imbellis, Lec.

Generally distributed, not uncommon—Liebeck.

S. advena, Watl.

I have taken this rarely, under bark.

NAUSIBIUS, Redt.

N. dentatus, Marsh.

Generally distributed, not uncommon—Liebeck.

CATOGENUS, Westw.

O. rufus, Fabr.

Generally distributed, rare—Liebeck. Locally common—Wenzel. Caldwell, rare—Crane. Hudson county—Linell. Newark.

OUCUJUS, Fabr.

O. clavipes, Fabr.

Generally distributed, not uncommon—Wenzel, Liebeck. Fort Lee, abundant in fall—Linell. Caldwell, common—Crane. Newark.

LÆMOPHLEUS, Lap.

L. biguttatus, Say.

Westville, not uncommon—Liebeck. Anglesea, in July—Schwarz. Hudson county—Linell.

L. fasciatus, Melsh.

Anglesea, in July—Schwarz. Newark.

L. convexulus, Lec.

Hudson county—Linell.

L. adustus, Lec.

Hudson county—Linell.

L. testaceus, Lec.

Hudson county—Linell.

LATHROPUS, Er.

L. vernalis, Lec.

Anglesea, in July—Schwarz. Hudson county—Linell.

BRONTES, Fabr.

B. dubius, Fabr.

Generally distributed, rare—Wenzel. Camden, not uncommon—Liebeck. Caldwell, common—Crane. Newark.

B. debilis, Lec.

Hudson county—Linell. Mr. Linell adds, "according to Captain Casey, the northern form is *not dubius*."

TELEPHANUS, Er.

T. velox, Hald.

Generally distributed, not uncommon—Liebeck. Brigantine Beach, in September—Hamilton. Hudson county—Linell. Newark.

Family CRYPTOPHAGIDÆ.*

TELMATOPHILUS, Heer.

T. americanus, Lec.

Hudson county—Linell.

LOBERUS, Lec.

L. impressus, Lec.

I have taken this either in Hudson or Essex county, rarely. Hudson county—Linell.

TOMARUS, Lec.

T. pulchellus, Lec.

Anglesea, in July—Schwarz. Hudson county—Linell.

ANTHEROPHAGUS, Latr.

A. ochraceus, Melsh.

Westville, rare—Liebeck. Hudson county—Linell.

ATOMARIA, Steph.

A. ephippiata, Zimm.

Camden, moderately common—Liebeck. Hudson county—Linell. Newark—Loeffler.

Family MYCETOPHAGIDÆ.

MYCETOPHAGUS, Hellw.

M. punctatus, Say.

Generally distributed, rather common—Liebeck. Hudson county—Linell.

*A number of species in this family are in collections, awaiting identification.

M. flexuosus, Say.

Generally distributed, rather common—Liebeck. Hudson county—Linell.

M. melsheimeri, Lec.

Camden, rare—Liebeck.

M. pluripunctatus, Lec.

Westville, rare—Liebeck.

M. pini, Ziegl.

Westville, rare—Liebeck.

LITARGUS, Er.**L. sex-punctatus**, Say.

Anglesea, in July—Schwarz. Hudson county—Linell.

L. didesmus, Say.

Anglesea, in July—Schwarz. Hudson county—Linell.

TYPHCEA, Steph.**T. fumata**, Linn.

Westville, rare—Liebeck. Newark—Loeffler.

Family DERMESTIDÆ.**BYTURUS**, Latr.**B. unicolor**, Say.

Generally distributed, not rare—Liebeck. Hudson county—Linell.

DERMESTES, Linn.**D. caninus**, Germ.

Generally distributed, not uncommon—Liebeck, Wenzel. Brigantine Beach, in September—Hamilton. Newark.

D. lardarius, Linn.

Generally distributed, common—Wenzel, Liebeck. Brigantine Beach, in September—Hamilton. Caldwell, common—Crane. Newark. Madison.

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D. vulpinus, Fabr.

Westville, rare—Liebeck. Generally distributed—Wenzel.
Caldwell, common—Crane.

D. frischii, Kug.

Sea-shore, moderately abundant—Liebeck. Brigantine Beach,
in September, abundant—Hamilton.

ATTAGENUS, Latr.

A. piceus, Oliv.

Common throughout the State.

TROGODERMA, Latr.

T. ornatum, Say.

I have taken specimens on flowers. Caldwell, rare—Crane.

T. tarsale, Melsh.

Generally distributed, rather common—Liebeck. Sometimes
quite annoying as a museum pest.

ANTHRENUS, Geoffr.

A. scrophulariæ, Linn.

New Brunswick; excessively abundant in April. This is the
carpet beetle, the parent of the so-called "Buffalo Moth."
Caldwell, common—Crane. Newark.

A. varius, Fabr.

Generally distributed; common. This is the ordinary museum
pest, so often injurious to all dried specimens of animals or
plants.

A. musæorum, Linn.

Also a museum pest, but more rare than the preceding.

CRYPTORHOPALUM, Guer.

C. ruficorne, Lec.

Not uncommon on flowers in Ocean county.

C. triste, Lec.

Brigantine Beach, mainland, in September, on Solidago—
Hamilton.

ORPHILUS, Er.**O. glabratus, Fabr.**

Not uncommon on flowers.

Family HISTERIDÆ.**HOLELEPTA, Payk.****H. quadridentata, Fabr.**

Hudson county—Linell.

H. lucida, Lec.

Hudson county—Linell.

H. fossularis, Say.Camden and Gloucester counties, not common—Wenzel.
Gloucester, Dacosta, rare—Liebeck. Caldwell, rare—Crane.
Hudson county—Linell. Newark.**HISTER, Linn.****H. arcuatus, Say.**

Sea-shore, not rare—Wenzel. Brigantine Beach, in September, frequent—Hamilton. Newark. Madison.

H. biplagiatus, Lec.

Generally distributed, not common—Wenzel. Westville, not uncommon—Liebeck. Brigantine Beach, in September, rare—Hamilton.

H. interruptus, Beauv.

Generally distributed, common—Wenzel, Liebeck. Hudson county, common—Linell. Newark.

H. marginicollis, Lec.

Madison—Paulmier.

H. abbreviatus, Fabr.

Generally distributed, common—Wenzel. Brigantine Beach, in September, frequent—Hamilton. Newark. Hudson county—Linell.

H. civilis, Lec.

Sea-shore, rare—Liebeck. Camden and Gloucester counties, not common—Wenzel. Brigantine Beach, in September, less frequent—Hamilton.

H. furtivus, Lec.

Madison—Paulmier.

H. depurator, Say.

Hudson county—Linell. A common species near Jersey City.

H. bimaculatus, Linn.

Sea-shore, rare—Liebeck. Atlantic county, rare—Wenzel. Caldwell, common—Crane. Madison.

H. sedecimstriatus, Say.

Hudson county—Linell. Caldwell, common—Crane.

H. americanus, Payk.

Generally distributed, common—Wenzel, Liebeck. Hudson county—Linell.

H. perplexus, Lec.

I have found this not uncommon in the State.

H. exaratus, Lec.

Brigantine Beach, in September, rare—Hamilton.

H. subrotundatus, Say.

Generally distributed, common—Liebeck, Wenzel. Hudson county—Linell. Newark.

H. vernus, Say.

Generally distributed, not common—Wenzel.

H. carolinus, Payk.

Generally distributed, common—Liebeck. Under bark—Wenzel. Hudson county—Linell.

H. lecontei, Mars.

Generally distributed, under bark—Wenzel. Westville, not uncommon—Liebeck. Caldwell, rare—Crane. Newark. Hudson county—Linell.

H. parallelus, Say.

Not uncommon under bark—Wenzel. Madison.

H. attenuatus, Lec.

Under bark, rather rare—Wenzel.

EPIERUS, Er.**E. pulicarius**, Er.

Camden and Gloucester counties, under bark, not common—Wenzel.

HETÆRIUS, Er.**H. brunnipennis**, Rand.

Orange Mountains, in ants' nests, not rare—Linell and Newark list.

PAROMALUS, Er.**P. æqualis**, Say.

Snake Hill, under bark—Linell. Generally distributed, under bark—Wenzel.

P. estriatus, Lec.

Snake Hill, under bark—Linell.

P. geminatus, Lec.

Brigantine Beach, in September, rare—Hamilton.

P. 14-striatus, Steph.

Brigantine Beach, in September—Hamilton. Snake Hill, under bark—Linell.

P. bistriatus, Er.

Snake Hill, under bark—Linell.

P. seminulum, Er.

Snake Hill, under bark—Linell.

Mr. Linell adds that these species are found under bark of freshly-cut, not decayed stumps, but where the sap is still flowing.

SAPRINUS, Er.**S. pennsylvanicus**, Payk.

Generally distributed, common—Wenzel, Liebeck. Brigantine Beach, in September, common—Hamilton. Sandy Hook, common—Smith. This species is abundant all along the seashore, under carrion.

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S. assimilis, Payk.

Sea-shore, not uncommon—Wenzel. Brigantine Beach, in September—Hamilton. Atlantic City—Castle.

S. sphæroides, Lec.

Brigantine Beach, in September, rare—Hamilton.

S. fraternus, Say.

Generally distributed, not rare—Wenzel. Anglesea, in July—Schwarz. Brigantine Beach, in September, common—Hamilton. Sandy Hook, common—Smith. Caldwell, common—Crane.

S. patruelis, Lec.

Brigantine Beach, in September, frequent—Hamilton. Cape May, in July—Schwarz.

S. dimidiatipennis, Lec.

Sea-shore, rare—Wenzel, Liebeck.

PLEGADERUS, Er.

P. transversus, Say.

Generally distributed, not common—Wenzel. Atlantic City—Castle.

ÆLETES, Horn.

A. politus, Lec.

Ocean county, common on cranberry bogs, in May—Smith.

Family NITIDULIDÆ.

Under this family Mr. Linell remarks: "Sap beetles are, in my experience, most abundant in September and October, on tree stumps cut in the spring of the same year." Mr. Wenzel also says that decaying fruit in the fall is prolific in species of this family.

BRACHYPTERUS, Er.

B. urticæ, Fabr.

Generally distributed, not rare—Wenzel. I have taken it near Hoboken.

CERCUS, Latr.

C. abdominalis, Er.

Westville, not uncommon—Liebeck. Hudson county—Linell.
Newark.

CARPOPHILUS, Steph.

C. hemipterus, Linn.

Hudson county, not rare locally—Linell.

C. niger, Say.

Generally distributed, common—Wenzel. Hudson county—
Linell.

C. corticinus, Er.

Camden, rare—Liebeck.

C. brachypterus, Say.

Hudson county—Linell.

C. antiquus, Melsh.

Hudson county—Linell.

I have taken all these myself on the wooded slopes of the
Palisades.

COLASTUS, Er.

C. maculatus, Er.

Hudson county—Linell.

C. semitectus, Say.

Generally distributed, common—Wenzel. Hudson county—
Linell.

C. unicolor, Say.

Same as before.

C. truncatus, Rand.

Same as before.

All these are about equally common.

CONOTELUS, Er.

C. obscurus, Er.

Generally distributed, rare—Liebeck. Brigantine Beach, in
September—Hamilton. Hudson county—Linell.

EPURÆA, Er.

E. helvola, Er.

Generally distributed, not rare—Wenzel. Anglesea, in July—Schwarz. Brigantine Beach, mainland, in September—Hamilton. Hudson county—Linell.

E. rufa, Say.

Hudson county—Linell. Madison.

E. avara, Rand.

Hudson county—Linell.

E. peltoides, Horn.

Hudson county—Linell.

E. labilis, Er.

Generally distributed, common—Wenzel. Hudson county—Linell.

NITIDULA, Fabr.

N. rufipes, Linn.

Camden, rare—Liebeck. Brigantine Beach, in September—Hamilton. Hudson county—Linell. Madison.

N. ziczac, Say.

Common all over the State.

STELIDOTA, Er.

S. geminata, Say.

Generally distributed—Wenzel. Westville, rare—Liebeck. Hudson county—Linell.

S. 8-maculata, Say.

Anglesea, in July—Schwarz. Hudson county—Linell.

S. strigosa, Gyll.

Brigantine Beach, mainland, in September—Hamilton.

PROMETOPIA, Er.

P. 6-maculata, Say.

Generally distributed, common—Wenzel, Liebeck. Hudson county—Linell. Caldwell, common—Crane. Newark.

PHENOLIA, Er.

P. grossa, Fabr.

Generally distributed, not uncommon—Wenzel, Liebeck.
Hudson county—Linell. Newark.

OMOSITA, Er.

O. colon, Linn.

Generally distributed, common—Wenzel, Liebeck. Brigantine Beach, in September—Hamilton. Hudson county—Linell. Newark.

SORRONIA, Er.

S. guttulata, Lec.

Hudson county, rare—Linell.

S. undulata, Say.

Generally distributed, moderately abundant—Liebeck, Wenzel.
Hudson county—Linell.

S. ulkei, Lec.

Sea-shore, rare—Liebeck.

POCADIUS, Er.

P. helvolus, Er.

Fort Lee, abundant—Linell. Generally distributed, not common—Wenzel.

P. infuscatus, Reitter.

New Jersey—One specimen in Dr. Horn's collection.

OXYCNEMUS, Er.

O. histrina, Lec.

Generally distributed, not common—Wenzel. Sea-shore, rare—Liebeck. Hudson county—Linell.

AMPHICROSSUS, Er.

A. ciliatus, Oliv.

Generally distributed, not rare—Wenzel. Hudson county—Linell.

PALLODES, Er.

P. silaceus, Er.

Generally distributed, not rare—Wenzel. Anglesea, in July—
Schwarz. Hudson county—Linell. Newark. Madison.

CYCHRAMUS, Kug.

C. adustus, Er.

Near Hoboken, rare—Smith.

CRYPTARCHA, Shuck.

C. ampla, Er.

Generally distributed, rather common—Wenzel, Liebeck.
Hudson county—Linell.

C. strigata, Fabr.

Hudson county—Linell. Newark—Loeffler.

C. concinna, Melsh.

Hudson county—Linell.

IPS, Fabr.

I. obtusus, Say.

Westville, rare—Liebeck. Snake Hill, rare—Linell. Newark.

I. fasciatus, Oliv.

Generally distributed, common—Wenzel, Liebeck. Brigantine
Beach, in September—Hamilton. Hudson county—Linell.
Caldwell, common—Crane. Newark.

I. sanguinolentus, Oliv.

Camden. Gloucester county, not uncommon—Wenzel.
Westville, not uncommon—Liebeck. Hudson county—Linell.
Newark.

I. cylindricus, Lec.

Caldwell, rare—Crane.

RHIZOPHAGUS, Hbst.

R. cylindricus, Lec.

Generally distributed, not uncommon—Liebeck.

R. bipunctatus, Say.

Hudson county—Linell.

Family LATRIDIIDÆ.**STEPHOSTETHUS, Lec.**

S. liratus, Lec.

Generally distributed and locally not rare—Smith.

CORTICARIA, Marsh.

C. deleta, Mann.

Generally distributed, not common—Smith. Newark—
Loeffler.

C. americana, Mann.

Hudson county—Linell.

C. longipennis, Lec.

Newark—Loeffler.

C. cavicollis, Mann.

Hudson county—Linell.

C. simplex, Lec.

Anglesea, in July—Schwarz.

Family TROGOSITIDÆ.**NEMOSOMA, Latr.**

N. parallelum, Melsh.

Hudson county—Linell. Newark; rare.

TROGOSITA, Oliv.

T. virescens, Fabr.

Generally distributed, rather common—Wenzel, Liebeck.
Newark.

TENEBRIOIDES, Pall.

T. corticalis, Melsh.

Generally distributed, rather common—Wenzel, Liebeck.
Hudson county—Linell. Caldwell, rare—Crane.

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T. castanea, Melsh.

Generally distributed—Wenzel. Camden, rare—Liebeck.
Hudson county—Linell.

T. bimaculata, Melsh.

Hudson county—Linell.

THYMALUS, Duft.

T. fulgidus, Er.

Hudson county—Linell. Newark.

MONOTOMA, Hbst.

M. producta, Lec.

Brigantine Beach, in September, abundant—Hamilton.
Anglesea, in July, common—Schwarz.

M. picipes, Hbst.

Hudson county—Linell.

BAOTRIDIIUM, Lec.

B. ephippigerum, Guer.

Hudson county—Linell.

B. striolatum, Reit.

Hudson county—Linell.

B. cavicolle, Horn.

Hudson county—Linell.

Family BYRRHIDÆ.

NOSODENDRON, Latr.

N. unicolor, Say.

Camden and Gloucester counties, rare—Wenzel.

OYTILUS, Er.

O. sericeus, Först.

Hudson county—Linell. Newark.

BYRRHUS, Linn.**B. americanus, Lec.**

Sea-shore, not common—Wenzel, Liebeck.

Family PARNIDÆ.**PSEPHENUS, Hald.****P. lecontei, Lec.**

Newark ; not common.

DRYOPS, Oliv.**D. lithophilus, Germ.**

Clifton, abundant—Linell. Newark.

D. fastigiatus, Say.Clifton, abundant—Linell. New Jersey—Collection Roberts.
Newark—Bischoff.**D. striatus, Lec.**

New Jersey—Collection Roberts.

ELMIS, Latr.**E. 4-notatus, Say.**

Clifton—Linell. New Jersey—Collection Roberts.

E. pusillus, Lec.

Clifton, not rare—Linell.

STENELMIS, Dup.**S. crenatus, Say.**

Clifton, abundant—Linell. New Jersey—Collection Roberts.

S. vittipennis, Zimm.

Clifton, not common—Linell.

S. quadrimaculatus, Horn.

Newark—Bischoff.

MACRONYCHUS, Müll.**M. glabratus, Say.**

Clifton, common—Linell. New Jersey—Collection Roberts.

ANCYRONYX, Er.

A. variegatus, Germ.

Clifton, not common—Linell. New Jersey—Collection
Roberts.

Family HETEROCERIDÆ.

HETEROCERUS, Fabr.

H. tristis, Mann.

Sea-shore, rare—Liebeck.

H. fatuus, Kies.

Brigantine Beach, in September—Hamilton. Newark.

H. substriatus, Kies.

Sea-shore, not rare—Wenzel.

H. mollinus, Kies.

Sea-shore, not rare—Wenzel.

H. collaris, Kies.

Sea-shore, not rare—Wenzel.

H. brunneus, Melsh.

Newark; a single specimen.

Family DASYLLIDÆ.

EURYPOGON, Mots.

E. niger, Melsh.

Hudson county—Linell. Newark—Bischoff.

ODONTONYX, Guer.

O. trivittis, Germ.

Newark—Bischoff.

PTILODACTYLA, Lat.

P. serricollis, Say.

Hudson county—Linell.

EUCINETUS, Germ.**E. terminalis, Lec.**

Hudson county—Linell.

ECTOPRIA, Lec.**E. nervosa, Melsh.**

Hudson county—Linell.

HELODES, Latr.**H. thoracica, Guer.**

Newark. Not uncommon in Ocean and Monmouth counties.

SCIPTES, Ill.**S. orbiculatus, Fabr.**

Hudson county—Linell.

S. tibialis, Guer.

I have several times taken this in the State.

CYPHON, Payk.**C. collaris, Guer.**

Hudson county—Linell.

C. variabilis, Thunb.

Common on flowers, Ocean and Monmouth counties. Angle-sea, in July—Schwarz.

Family RHIPICERIDÆ.**SANDALUS, Knoch.****S. petrophya, Knoch.**

Northern Jersey, rare—Liebeck. Newark.

Family ELATERIDÆ.**MELASIS, Oliv.****M. pectinicornis, Melsh.**

Newark. Atlantic City—Castle.

THAROPS, Lap.

T. ruficornis, Say.

Sea-shore, rare—Liebeck. Hudson county—Linell.

DELTOMETOPUS, Bonv.

D. amoenicornis, Say.

Generally distributed, rare—Liebeck. Hudson county—Linell.

MICRORRHAGUS, Esch.

M. triangularis, Say.

Newark, compared with Dr. Horn's specimens. Madison.

ADELOCERA, Latr.

A. marmorata, Fabr.

Gloucester and Camden counties, not common—Wenzel.
Westville, rare—Liebeck.

A. discoidea, Web.

Generally distributed, not rare—Wenzel, Liebeck.

A. maculata, Lec.

Exact locality unknown; rare; not taken recently—Liebeck.

CHALCOLEPIDIUS, Esch.

C. viridipilis, Say.

Gloucester and Camden counties, not rare—Wenzel. Westville, rare—Liebeck.

AL AUS, Esch.

A. oculatus, Linn.

Occurs everywhere in the State, not uncommonly.

A. myops, Fabr.

Generally distributed, moderately abundant—Wenzel, Liebeck.
Occurs throughout the pine districts; more common southward.

CARDIOPHORUS, Esch.

C. cardisce, Say.

Generally distributed, not uncommon—Wenzel.

C. gagates, Er.

Madison—Paulmier.

C. robustus, Lec.

New Jersey—Collection Dr. Horn.

HORISTONOTUS, Cand.

H. curiatus, Say.

Gloucester and Camden counties, not common—Wenzel.

Westville, rare—Liebeck. Hudson county—Linell.

CRYPTOHYPNUS, Esch.

C. guttulatus, Melsh.

Camden, rare—Liebeck.

C. pulchellus, Linn.

Westville, rare—Liebeck. New Jersey—Collection Dr. Horn.

C. obliquatulus, Melsh.

Camden, rare—Liebeck. Ocean county, not rare—Smith.

MONOCREPIDIUS, Esch.

M. lividus, De G.

Generally distributed, common—Liebeck, Wenzel. Hudson county—Linell.

M. vespertinus, Fabr.

Generally distributed, common—Liebeck, Wenzel. Hudson county—Linell. Caldwell, common—Crane.

M. auritus, Hbst.

Camden and Gloucester counties, not uncommon—Wenzel. Westville, rather common—Liebeck. Brigantine Beach, mainland, in September, common—Hamilton. Hudson county—Linell. Madison. Ocean county—Smith.

M. bellus, Say.

Camden and Gloucester counties, not uncommon—Wenzel. Westville, Gloucester, not uncommon—Liebeck. Hudson county—Linell.

ELATER, Linn.

E. hepaticus, Melsh.

Camden and Gloucester counties, not rare—Wenzel.

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E. pedalis, Germ.

Generally distributed, not rare—Wenzel. Atco, rare—Liebeck.

E. mixtus, Hbst.

New Jersey—Collection Dr. Horn.

E. nigricollis, Hbst.

Generally distributed, not rare—Wenzel. Rare—Liebeck.
Hudson county—Linell. Newark.

E. linteus, Say.

Generally distributed, not rare—Wenzel. Rare—Liebeck.
Hudson county—Linell.

E. sayi, Lec.

Gloucester and Camden counties, very rare—Wenzel. New Jersey—Collection Dr. Horn.

E. rubricollis, Hbst.

Gloucester and Camden counties, rare—Wenzel. Westville, rare—Liebeck. Newark.

E. nigricans, Germ.

Hudson county—Linell.

E. rubricus, Say.

Hudson county—Linell. New Jersey—Collection Dr. Horn.
Ocean county, rare—Smith.

E. collaris, Say.

Camden, rare—Liebeck.

E. sanguinipennis, Say.

Brigantine Beach, mainland, in September, very rare—Hamilton.

E. xanthomus, Germ.

Camden and Gloucester counties, rare—Wenzel. Dacosta, rare—Liebeck.

E. obliquus, Say.

Generally distributed, not rare—Wenzel, Liebeck. Hudson county—Linell. Newark. Ocean county, rare—Smith.

E. pusio, Germ.

Hudson county—Linell.

DRASTERIUS, Esch.**D. elegans, Fabr.**

Generally distributed, common—Wenzel, Liebeck. Hudson county—Linell. Newark.

D. amabilis, Lec.

Camden and Gloucester counties, rare—Wenzel. Camden, rare—Liebeck. Hudson county—Linell.

MEGAPENTHES, Kies.**M. limbalis, Hbst.**

Generally distributed, rare—Liebeck. Hudson county—Linell. Newark.

M. rufilabris, Germ.

Atco, rare—Liebeck. Hudson county—Linell.

LUDIUS, Latr.**L. attenuatus, Say.**

Camden, rare—Liebeck. Hudson county—Linell. Caldwell, rare—Crane.

L. abruptus, Say.

Westville, rare—Liebeck. Hudson county—Linell. Caldwell, rare—Crane.

AGRIOTUS, Esch.**A. mancus, Say.**

Hudson county—Linell. Newark. Caldwell, rare—Crane.

A. insanus, Cand.

Hudson county—Linell.

A. pubescens, Melsh.

Generally distributed, rare—Liebeck. Camden and Gloucester counties, not common—Wenzel.

A. oblongicollis, Melsh.

As before: also Hudson county—Linell.

DOLOPIUS, Esch.**D. lateralis, Esch.**

Landisville, Atco, rare—Liebeck. Hudson county—Linell. Caldwell, rare—Crane.

L

BETARMON, Kies.

B. bigeminatus, Rand.

Hudson county—Linell.

GLYPHONYX, Cand.

G. recticollis, Say.

Generally distributed, not rare—Liebeck. Hudson county—Linell. Ocean county, in May, common—Smith.

G. testaceus, Melsh.

Camden and Gloucester counties, not rare—Wenzel. Anglesea, in July—Schwarz. Hudson county—Linell. Ocean county, in May, common—Smith.

MELANOTUS, Esch.

M. decumanus, Er.

Generally distributed, not rare—Wenzel. Hudson county—Linell.

M. secretus, Lec.

Atco, rare—Liebeck.

M. ignobilis, Melsh.

New Jersey—Collection Dr. Horn.

M. depressus, Melsh.

Generally distributed, not rare—Wenzel.

M. tænicollis, Lec.

New Jersey. All of Dr. Horn's specimens are so marked.

M. glandicolor, Melsh.

Hudson county—Linell.

M. fissilis, Say.

Occurs commonly throughout the State.

M. communis, Gyll.

Occurs commonly throughout the State.

M. exuberans, Lec.

New Jersey—Collection Dr. Horn.

M. parumpunctatus, Melsh.

Hudson county—Linell.

M. cribulosus, Lec.

Generally distributed, not common—Wenzel.

M. tenax, Say.

New Jersey—Collection Dr. Horn.

M. americanus, Hbst.

Generally distributed, not common—Wenzel, Liebeck. Hudson county—Linell.

M. insipiens, Say.

Generally distributed, rare—Liebeck.

M. variolatus, Lec.

Recorded on the Newark list.

LIMONIUS, Esch.

L. auripilis, Say.

Camden and Gloucester counties, rare—Wenzel. Atco, rare—Liebeck.

L. stigma, Hbst.

New Jersey—Collection Dr. Horn.

L. griseus, Beauv.

Generally distributed, common—Wenzel, Liebeck. Hudson county—Linell.

L. confusus, Lec.

Generally distributed, not uncommon—Liebeck.

L. plebeius, Say.

Hudson county—Linell.

L. æger, Lec.

Not rare in Ocean county.

L. quercinus, Say.

Generally distributed, common—Liebeck. Hudson county—Linell. Madison. I have taken this abundantly in Ocean county.

L. basillaris, Say.

Generally distributed, common—Liebeck, Wenzel.

L. agonus, Say.

Atlantic City—Castle.

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L. nimbatus, Say.

Generally distributed, not rare—Wenzel. Westville, rare—Liebeck. Hudson county—Linell.

PITYOBIUS, Lec.

P. anguinus, Lec.

Atlantic City, rare, not taken recently—Liebeck. Atlantic City, Dacosta—Castle.

ATHOUS, Esch.

A. brightwelli, Kirby.

Hudson county—Linell.

A. acanthus, Say.

Hudson county—Linell.

A. cucullatus, Say.

Generally distributed, not rare—Liebeck. Anglesea, in July—Schwarz. Hudson county—Linell.

A. equestris, Lec.

New Jersey—Collection Dr. Horn.

A. limbatus, Lec.

Atlantic City—Castle.

CISTODES, Lec.

O. tenuicollis, Rand.

Ocean county; not common.

SERICOSOMUS, Steph.

S. viridanus, Say.

Sea-shore, rare—Liebeck.

S. debilis, Say.

Landisville, rare—Liebeck.

CORYMBITES, Latr.

C. tessellatus, Linn.

Camden and Gloucester counties, rare—Wenzel.

C. cylindriformis, Hbst.

Generally distributed, common—Wenzel, Liebeck. Caldwell, common—Crane. Hudson county—Linell. Newark.

C. pyrrhos, Hbst.

Generally distributed, rather common—Wenzel, Liebeck.
Hudson county—Linell. Newark. Caldwell, common—Crane.

C. bivittatus, Melsh.

Sea-shore, rare—Liebeck.

C. tarsalis, Melsh.

Generally distributed, not uncommon—Liebeck, Wenzel.

C. sulcicollis, Say.

Generally distributed, rare—Wenzel.

C. æthiops, Hbst.

Generally distributed, rare—Wenzel. Hudson county—Linell.
Newark.

C. hieroglyphicus, Say.

Generally distributed, not uncommon—Liebeck. Hudson
county—Linell. Newark. Caldwell, rare—Crane.

C. metallicus, Payk.

Camden and Gloucester counties, rare—Wenzel.

C. inflatus, Lec.

Gloucester, rare—Liebeck. Hudson county—Linell.

ASAPHES, Kirby.**A. decoloratus**, Say.

Hudson county—Linell. Not an uncommon species in the
Orange Mountains. Madison.

A. memnonius, Hbst.

Generally distributed, not uncommon—Liebeck. Hudson
county—Linell. Newark. Caldwell, common—Crane. Madison.

A. bilobatus, Say.

Hudson county—Linell. Caldwell, common—Crane.

MELANAOTES, Lec.**M. piceus**, Deg.

Generally distributed, rare—Liebeck. Camden and Gloucester
counties, not rare—Wenzel. Hudson county—Linell. Newark.

M. morio, Fabr.

Camden and Gloucester counties, not rare—Wenzel. Hudson county—Linell. Newark. Caldwell, rare—Crane.

CEBRIO, Oliv.

C. bicolor, Fabr.

Camden and Gloucester counties, rare—Wenzel.

PEROTHOPS, Er.

P. mucida, Gyll.

Camden, rare—Liebeck.

Family THROSCIDÆ.

DRAPETES, Redt.

D. geminatus, Say.

Westville, rare—Liebeck. Hudson county—Linell.

THROSCUS, Latr.

T. constrictor, Say.

Ocean county, rare—Smith. Newark—Loeffler.

T. chevrolati, Bonv.

Hudson county, not common—Linell. Newark—Loeffler.

Family BUPRESTIDÆ.

CHALCOPHORA, Sol.

C. virginienensis, Dru.

Generally distributed, common—Wenzel. Westville, rather common—Liebeck. Newark.

C. liberta, Germ.

Atlantic county, not common—Wenzel. Westville, Egg Harbor, rare—Liebeck.

DIOERCA, Esch.**D. prolongata, Lec.**

Recorded on the Newark list.

D. divaricata, Say.

Generally distributed, common—Wenzel. Camden, rare—Liebeck. Hudson county—Linell. Madison. Caldwell, common—Crane.

D. pugionata, Germ.

Gloucester county, on Black Alder, rare—Wenzel. Westville, rare—Liebeck. Hudson county—Linell. Newark.

D. obscura, Fabr.

Generally distributed, common—Wenzel, Liebeck. Hudson county—Linell. Newark. Caldwell, rare—Crane.

Var. lurida, Fabr.

Same distribution as type, and equally common.

D. spreta, Gory.

Camden and Gloucester counties, rare—Wenzel. Newark.

D. asperata, Lap. & Gory.

Exact locality unknown, rare—Liebeck.

D. punctulata, Sch.

Camden and Gloucester counties, rare—Wenzel. Sea-shore, rare—Liebeck.

PÆCILONOTA, Esch.**P. cyanipes, Say.**

Sea-shore, rare—Liebeck. Newark.

P. thureura, Say.

Atlantic county, rare—Wenzel. Gloucester, rare—Liebeck.

BUPRESTIS, Linn.**B. rufipes, Oliv.**

Sea-shore, rare—Liebeck.

B. lineata, Say.

Generally distributed, common—Wenzel, Liebeck. Brigantine Beach, in September, in drifted wood—Hamilton. Newark.

B. consularis, Gory.

Sea-shore, rare—Liebeck.

B. nuttalli, Kirby.

Generally distributed, not rare—Wenzel.

B. fasciata, Fabr.

Gloucester county, rare—Wenzel.

B. striata, Fabr.

Atlantic county, rare—Wenzel. Dacosta, Westville, rare—Liebeck. Newark.

B. decora, Fabr.

Gloucester county, very rare—Wenzel.

B. ultramarina, Say.

Generally distributed, rare—Liebeck. Gloucester and Atlantic counties, rare—Wenzel.

CINYRA, Lap. & Gory.

C. gracilipes, Melsh.

Gloucester county, rare—Wenzel. Westville, rare—Liebeck. Hudson county—Linell.

MELANOPHILA, Esch.

M. notata, Lap. & Gory.

Sea-shore, rare—Liebeck.

M. longipes, Say.

Generally distributed, rather common—Wenzel, Liebeck. Newark.

M. fulvoguttata, Harr.

Recorded on the Newark list.

M. æneola, Melsh.

Landisville, rare—Liebeck. New Jersey—Collection Dr. Horn. Atlantic City—Castle.

ANTHAXIA, Esch.

A. æneogaster, Lap.

Recorded on the Newark list.

A. viridifrons, Lap.

Generally distributed, not common—Wenzel.

A. cyanella, Gory.

Generally distributed, not common—Wenzel.

A. quercata, Fabr.

Generally distributed, not common—Wenzel. Dacosta, not rare—Liebeck.

A. flavimana, Gory.

Generally distributed, not uncommon—Wenzel, Liebeck.

CHRYSOBOTHERIS, Esch.**C. femorata**, Fabr.

Common all over the State.

Var. 4-imprensa, Lap. & Gory.

New Jersey—Collection Dr. Horn.

C. floricola, Gory.

Generally distributed, rare—Wenzel. Landisville, Dacosta, rare—Liebeck. Hudson county—Linell.

C. dentipes, Germ.

Generally distributed, rare—Wenzel. Gloucester, Dacosta, rare—Liebeck. Hudson county—Linell.

C. pusilla, Lap. & Gory.

Atlantic county, rare—Wenzel. Landisville, Dacosta, rare—Liebeck.

C. sexsignata, Say.

Generally distributed, rare—Liebeck. Camden and Gloucester counties, rare—Wenzel. Hudson county—Linell. Newark.

C. chrysoela, Ill.

Orange Mountains, rare—Smith.

C. chlorocephala, Gory.

Landisville, Dacosta, rare—Liebeck. New Jersey—Collection Dr. Horn.

ACTENODES, Lac.**A. acornis**, Say.

Atlantic county, rare—Wenzel. Sea-shore, not rare—Liebeck. Brigantine Beach, in September, washed up by tide, rare—Hamilton. Newark.

ACMÆODERA, Esch.

A. ornata, Fabr.

Generally distributed, not common—Wenzel.

A. pulchella, Hbst.

Atco, not common—Liebeck. Atlantic county, rare—Wenzel.

A. culta, Web.

Quite generally distributed throughout the State ; not rare.

PTOSIMA, Sol.

P. gibbicollis, Say.

Sea-shore, rare—Liebeck.

MASTOGENIUS, Sol.

M. subcyaneus, Lec.

Camden and Gloucester counties, rare—Wenzel. Landisville, rare—Liebeck. Hudson county—Linell. Newark.

EUPRISTOCERUS, Deyr.

E. cogitans, Web.

Camden and Gloucester counties, not common—Wenzel. Westville, rare—Liebeck. Hudson county—Linell. Newark.

AGRILUS, Steph.

A. ruficollis, Fabr.

Common throughout the State.

A. fulgens, Lec.

Westville, rare—Liebeck.

A. otiosus, Say.

Generally distributed, not rare—Liebeck. Newark. Hudson county—Linell.

Var. pusillus, Say.

With the type, and equally common—Liebeck.

Var. defectus, Lec.

Newark, according to list.

A. bilineatus, Web.

Not rare throughout the State—Wenzel, Liebeck, Linell, Smith. Newark.

A. lecontei, Saund.

Hudson county—Linell.

A. fallax, Say.

Camden and Gloucester counties, rare—Wenzel.

A. interruptus, Lec.

Hudson county—Linell. Newark.

A. subcinctus, Gory.

Westville, rare—Liebeck.

A. plumbeus, Lec.

Hudson county—Linell.

A. politus, Say.

Recorded on the Newark list. Taken by myself near Jersey City.

A. egenus, Gory.

Generally distributed, common—Wenzel, Liebeck. Hudson county—Linell. Newark. Madison. Ocean county.

A. lacustris, Lec.

Generally distributed, not rare—Liebeck.

TAPHROCERUS, Sol.**T. gracilis**, Say.

Generally distributed, not uncommon—Liebeck. Gloucester county, locally not uncommon—Wenzel. Hudson county—Linell. Newark.

BRACHYS, Sol.**B. ovata**, Web.

Common throughout the State—Wenzel, Liebeck, Linell, Smith. Anglesea, in July—Schwarz.

Var. tessellata, Fabr.

I have seen specimens from Newark.

B. ærosa, Melsh.

Not rare throughout the State—Liebeck, Wenzel, Linell, Smith.

PACHYSCELUS, Sol.

P. purpureus, Say.

Recorded on the Newark list.

P. lævigatus, Say.

Generally distributed, not rare—Liebeck, Wenzel. Hudson county—Linell. Newark.

Family LAMPYRIDÆ.

CALOPTERON, Guer.

C. terminale, Say.

Hudson county—Linell.

C. reticulatum, Fabr.

Found not uncommonly throughout the State.

CELETES, Newn.

C. basalis, Lec.

Sea-shore, not common—Liebeck. Hudson county—Linell.

CCENIA, Newn.

C. dimidiata, Fabr.

Sea-shore, rare—Liebeck. Caldwell, common—Crane.

LOPHEROS, Lec.

L. fraternus, Rand.

Rare, near Paterson—Smith.

EROS, Newn.

E. thoracicus, Rand.

Westville, rare—Liebeck.

E. aurora, Hbst.

Generally distributed, not uncommon—Liebeck. Gloucester county, rare—Wenzel.

E. trilineatus, Melsh.

Westville, rare—Liebeck. Hudson county—Linell.

PLATEROS, Bourg.

P. timidus, Lec.

Hudson county—Linell.

P. modestus, Say.

Generally distributed, not rare—Wenzel. Atco, rare—Liebeck. Hudson county—Linell.

P. canaliculatus, Say.

Generally distributed, not rare—Liebeck. Hudson county—Linell.

P. sollicitus, Lec.

Generally distributed, not rare—Wenzel.

P. floralis, Melsh.

Atco, rare—Liebeck.

CALOCHEROMUS, Guer.

C. perfaceta, Say.

Generally distributed, rare—Liebeck. Orange Mountains, rare—Smith.

LUCIDOTA, Lap.

L. atra, Say.

Gloucester, rare—Liebeck. Hudson county—Linell. Newark.

L. punctata, Lec.

Dacosta, rare—Liebeck.

ELLYOHNIA, Lec.

E. corrusca, Linn.

Generally distributed, common—Wenzel, Liebeck. Newark.

PYROPYGA, Mots.

P. nigricans, Say.

Hudson county—Linell.

P. decipiens, Harr.

Generally distributed, common—Liebeck, Wenzel.

PYRACTOMENA, Lec.

P. angulata, Say.

Generally distributed, not common—Wenzel. Newark. Caldwell, rare—Crane.

P. lucifera, Melsh.

Generally distributed, common—Wenzel. Rare—Liebeck.

PHOTINUS, Lap.

P. consanguineus, Lec.

Generally distributed, not rare—Liebeck. Hudson county—Linell.

P. lineellus, Lec.

Atco, rare—Liebeck.

P. pyralis, Linn.

Hudson county, common—Linell, Smith. Newark.

P. marginellus, Lec.

Generally distributed, common—Wenzel, Liebeck. Caldwell, common—Crane.

P. scintillans, Say.

Generally distributed, common—Liebeck. Caldwell, common—Crane.

This genus contains the common "fire-flies," which form so attractive a feature of the early summer evenings. The species are somewhat local, and the common "fire-fly" in different parts of the State is apt to belong to different species.

PHOTURIS, Lec.

P. pennsylvanica, De G.

Generally distributed throughout the State, and the largest and most brilliant of our "fire-flies."

TYTTHONYX, Lec.

T. erythrocephalus, Fabr.

Atco, rare—Liebeck.

OMETHUS, Lec.

O. marginatus, Lec.

Atco, rare—Liebeck.

OCHAULIOGNATHUS, Hentz.

O. scutellaris, Lec.

Pine districts, common in spring—Wenzel.

O. pennsylvanicus, De G.

Generally distributed, common—Wenzel. Hudson county—Linell. Newark. Madison. I have taken this abundantly, in fall, on Solidago. Caldwell, common—Crane.

O. marginatus, Fabr.

Generally distributed, rather common—Liebeck. Brigantine Beach, mainland, in September—Hamilton. I have taken this commonly enough, in spring, in Ocean county. Caldwell, common—Crane.

PODABRUS, Westw.

P. tricostatus, Say.

Hudson county—Linell. Orange Mountains, rare—Smith.

P. rugulosus, Lec.

Generally distributed, common—Wenzel, Liebeck. Hudson county—Linell.

P. frater, Lec.

Generally distributed, rather common—Wenzel. Westville, rare—Liebeck.

P. basilaris, Say.

Generally distributed, rare—Liebeck. Hudson county—Linell. Caldwell, common—Crane. Madison.

P. diadema, Fabr.

Gloucester, rare—Liebeck.

P. modestus, Say.

Atco, rare—Liebeck. Caldwell, common—Crane.

P. comes, Lec.

Orange Mountains, rare—Smith.

P. tomentosus, Say.

Generally distributed, not rare—Linell.

P. protensus, Lec.

Hudson county—Linell.

P. brunnicolis, Lec.

Atco, rare—Liebeck.

TELEPHORUS, Schöff.

T. dentiger, Lec.

Hudson county—Linell.

T. excavatus, Lec.

Generally distributed, common—Wenzel. Dacosta, rare—Liebeck. Hudson county—Linell.

T. frazini, Say.

Generally distributed, not rare—Wenzel. Atco, rare—Liebeck.

T. carolinus, Fabr.

Common throughout the State.

T. lineola, Fabr.

Less common, but as generally distributed.

T. rectus, Melsh.

Generally distributed, not common—Wenzel.

T. flavipes, Lec.

Recorded on the Newark list.

T. scitulus, Say.

Common throughout the State; often excessively abundant on flowers.

T. pusillus, Lec.

Atco, rare—Liebeck.

T. rotundicollis, Say.

Westville, rare—Liebeck. Hudson county—Linell. Newark.

T. tuberculatus, Lec.

Generally distributed, not rare—Wenzel. Ocean county, common—Smith.

T. bilineatus, Say.

Found throughout the State, though scarcely common.

DITEMNUS, Lec.

D. bidentatus, Say.

Generally distributed, not rare—Liebeck. Hudson county—Linell.

TRYPHERUS, Lec.

T. latipennis, Germ.

Atco, rare—Liebeck. Hudson county—Linell.

MALTHINUS, Latr.

M. occipitalis, Lec.

Atco, rare—Liebeck.

MALTHODES, Kies.

M. concavus, Lec.

Hudson county—Linell.

Family MALACHIDÆ.**COLLOPS, Er.**

C. eximius, Er.

Generally distributed, not uncommon—Wenzel, Liebeck. Hudson county—Linell. Newark.

C. nigriceps, Say.

Generally distributed, not rare—Wenzel. Hudson county—Linell.

C. 4-maculatus, Fabr.

Common throughout the State. Caldwell, rare—Crane.

ANTHOCOMUS, Er.

A. flavilabris, Say.

Hudson county—Linell.

PSEUDOBÆUS, Horn.

P. oblitus, Lec.

Hudson county—Linell. Orange Mountains—Smith.

ATTALUS, Er.

A. terminalis, Er.

Hudson county—Linell. Ocean county—Smith.

A. morulus, Lec.

Hudson county—Linell. Orange Mountains—Smith.

A. granularis, Er.

Anglesea, in July—Schwarz.

A. circumscriptus, Say.

Atco, rare—Liebeck.

A. scincetus, Say.

Generally distributed, not uncommon—Liebeck. Hudson county—Linell. Orange Mountains, not rare—Smith.

Family CLERIDÆ.

OYMATODERA, Gray.

O. brunnea, Melsh.

Generally distributed, rare—Wenzel.

O. bicolor, Say.

Westville, rare—Liebeck.

O. inornata, Say.

Hudson county—Linell.

O. undulata, Say.

Generally distributed, rare—Wenzel. Camden, rare—Liebeck.

TRICHODES, Hbst.

T. apivorus, Germ.

Atlantic county, rare—Wenzel.

CLERUS, Geoff.

C. quadrisignatus, Say.

Generally distributed, not rare—Wenzel.

O. quadriguttatus, Oliv.

Generally distributed, not uncommon—Wenzel, Liebeck.
Hudson county—Linell.

O. rosmarus, Say.

Generally distributed, not rare—Wenzel. Rare—Liebeck.
Hudson county—Linell. Newark.

O. lunatus, Spin.

Generally distributed, not rare—Wenzel. Dacosta, rare—
Liebeck.

O. thoracicus, Oliv.

Generally distributed, not common—Wenzel, Liebeck. Hud-
son county—Linell. Newark.

THANASIMUS, Latr.

T. dubius, Fabr.

Generally distributed, but local—Wenzel. Hudson county—
Linell.

THANEROOLERUS, Spin.

T. sanguineus, Say.

Sea-shore, rare—Liebeck. Madison.

HYDNOCERA, Newm.

H. unifasciata, Say.

Generally distributed, rare—Wenzel. Atco, rare—Liebeck.
Hudson county—Linell.

H. humeralis, Say.

Common throughout the State.

Var. cyanescens, Lec.

Var. difficilis, Lec.

With the type and hardly less common.

H. pallipennis, Say.

Generally distributed, not uncommon—Wenzel, Liebeck.
Hudson county—Linell. Newark.

H. verticalis, Say.

Same as with *pallipennis*.

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H. tabida, Lec.

Dacosta, rare—Liebeck.

H. longicollis, Say.

Atco, rare—Liebeck.

PHYLLOBÆNUS, Spin.

P. dislocatus, Say.

Camden, rare—Liebeck. Hudson county—Linell.

CHARIESSA, Perty.

C. vestita, Spin.

Hudson county—Linell.

C. dichroa, Lec.

Generally distributed, rare—Wenzel.

C. pilosa, Först.

Generally distributed, not uncommon—Wenzel, Liebeck.
Hudson county—Linell. Caldwell, one specimen—Crane.

Var. onusta, Say.

Same as type form—Liebeck.

CREGYA, Lec.

C. vetusta, Spin.

Generally distributed, rare—Wenzel. Westville, rare—Liebeck.

C. oculata, Say.

Generally distributed, not rare—Wenzel, Liebeck. Hudson county—Linell.

ORTHOPLÉURA, Spin.

O. damicornis, Fabr.

Generally distributed, rare—Liebeck.

NECROBIA, Latr.

N. rufipes, Fabr.

Generally distributed, not uncommon—Wenzel, Liebeck.
Newark.

N. ruficollis, Fabr.

Same distribution as before.

N. violaceus, Linn.

Generally distributed, not rare—Wenzel.

Family PTINIDÆ.

PTINUS, Linn.

P. fur, Linn.

Generally distributed, not rare—Wenzel. Camden, rare—Liebeck. Caldwell, rare—Crane.

P. brunneus, Duft.

Camden, rare—Liebeck.

EUCRADA, Lec.

E. humeralis, Melsh.

New Brunswick, rare—Smith.

ERNOBIUS, Thom.

E. mollis, Linn.

Generally distributed, not common—Wenzel, Liebeck.

E. granulatus, Lec.

Brigantine Beach, in September, once only, six specimens—Hamilton.

E. luteipennis, Lec.

Westville, rare—Liebeck.

OZOGNATHUS, Lec.

O. floridanus, Lec.

Anglesea—Wenzel. Heretofore not found north of Florida.

OLIGOMERUS, Redt.

O. sericans, Melsh.

Anglesea, in July—Schwarz.

SITODREPA, Thom.

S. panicea, Linn.

Newark; not uncommon.

HADROBREGMUS, Thom.

H. errans, Melsh.

Westville, rare—Liebeck. Anglesea, in July—Schwarz.

H. carinatus, Say.

Westville, not uncommon—Liebeck.

TRICHODESMA, Lec.

T. gibbosa, Say.

Gloucester, rare—Wenzel. Westville, rare—Liebeck. Newark.

TRYPOPITYS, Redt.

T. sericeus, Say.

I have taken this along the Palisades, rarely.

PETALIUM, Lec.

P. bistriatum, Say.

Anglesea, in July—Schwarz.

EUPACTUS, Lec.

E. nitidus, Lec.

Hudson county—Linell. Anglesea—Wenzel.

XYLETINUS, Latr.

X. peltatus, Harr.

Generally distributed, rare—Liebeck.

X. fucatus, Lec.

Caldwell, common—Crane.

LASIODERMA, Steph.

P. serricorne, Fabr.

The so-called "tobacco beetle;" not uncommon in old cigarettes. Anglesea—Wenzel. Ocean county—Smith.

- L. nova species*, Horn dixit.
Anglesea, in July—Schwarz.

HEMIPTYCHUS, Lec.

- H. gravis*, Lec.
Anglesea—Wenzel.

DORCATOMA, Hbst.

- D. setulosum*, Lec.
Anglesea—Wenzel.

PROTHECA, Lec.

- P. puberula*, Lec.
Generally distributed, not common—Wenzel.

CÆNOCARA, Thom.

- C. oculata*, Say.
Generally distributed, not rare—Liebeck. Newark—Loeffler.

PTILINUS, Geoff.

- P. ruficornis*, Say.
Landisville, rare—Liebeck.

ENDECATOMUS, Mell.

- E. reticulatus*, Hbst.
Generally distributed, not rare—Liebeck.

SINOXYLON, Duft.

- S. basillare*, Say.
Generally distributed, not common—Wenzel, Liebeck.

BOSTRICHUS, Geoff.

- B. bicornis*, Web.
Generally distributed, not common—Wenzel, Liebeck.

AMPHICERUS, Lec.

- A. bicaudatus*, Say.
Atlantic county, rare—Wenzel.

DINODERUS, Steph.

D. porcatus, Lec.

Sea-shore, rare—Liebeck.

D. cribratus, Lec.

Generally distributed, not rare—Liebeck.

D. pusillus, Fabr.

Atlantic county, common—Wenzel.

LYOTUS, Fabr.

L. striatus, Melsh.

Hudson county—Linell. Specimens are in Newark collections.

L. opaculus, Lec.

Hudson county—Linell.

Family CUPESIDÆ.

CUPES, Fabr.

C. concolor, Westw.

New Jersey—Linell. Gloucester, rare—Wenzel.

C. capitata, Fabr.

New Jersey—Linell. Caldwell, one specimen—Crane.

Family LYMEXYLIDÆ.

LYMEXYLON, Fabr.

L. sericeum, Harr.

Gloucester, rare—Wenzel. Newark; one specimen in Mr. Bischoff's collection.

Family CIOIDÆ.

CIS, Lat.

C. fuscipes, Mell.

Hudson county—Linell.

O. punctatus, Mell.

Generally distributed, common—Wenzel. Anglesea, in July
—Schwarz.

C. sp. sp.

Anglesea, in July, two undetermined species—Schwarz.

ENNEARTHON, Mell.**E. thoracicornis**, Ziegl.

Anglesea, in July—Schwarz. Generally distributed, not rare
—Wenzel.

Family SPHINDIDÆ.**SPHINDUS**, Chev.**S. americanus**, Lec.

I have taken this not infrequently in New Jersey.

Family LUCANIDÆ.**LUCANUS**, Linn.**L. dama**, Thunb.

Generally distributed, not rare—Liebeck, Wenzel. Newark.
Decidedly more rare on and north of the red sandstone region.
Caldwell—Crane.

DORCUS, MacL.**D. parallelus**, Say.

Generally distributed, not uncommon—Liebeck, Wenzel.
Newark. Madison. Caldwell, rare—Crane.

D. brevis, Say.

Dacosta; rare. The only known specimens were taken here
by Mr. Bland.

PLATYCERUS, Geoff.**P. quercus**, Web.

Generally distributed, not rare—Wenzel, Liebeck. Caldwell,
rare—Crane. Newark.

CERUCHUS, MacL.

C. piceus, Web.

Generally distributed, rare—Liebeck. Gloucester and Camden counties, rare—Wenzel. Newark.

NICAGUS, Lec.

N. obscurus, Lec.

Gloucester, not uncommon—Wenzel, Liebeck.

PASSALUS, Fabr.

P. cornutus, Fabr.

Common everywhere throughout the State.

Family SCARABÆIDÆ.

CANTHON, Hoffm.

C. ebenus, Say.

Sea-shore, rare—Liebeck.

C. lecontei, Harold.

Sea-shore, rare—Liebeck, Wenzel. Gloucester, rare—Wenzel.

C. vigilans, Lec.

Atlantic county, rare—Wenzel. Sea-shore, rare—Liebeck.

C. lævis, Dru.

Common all over the State.

C. viridis, Beauv.

Atlantic City, rare, not taken recently—Liebeck.

CHERIDIUM, Lap.

C. histeroides, Web.

Generally distributed, not rare—Wenzel. Atco, rare—Liebeck.

COPRIS, Geoffr.

C. minutus, Dru.

Generally distributed, not uncommon—Wenzel. Sea-shore, not rare—Liebeck. Newark, Caldwell, rare—Crane.

C. anaglypticus, Say.

Common all over the State.

C. carolina, Linn.

Common all over the State.

PHANÆUS, MacL.

P. carnifex, Linn.

More or less common throughout the State.

ONTHOPHAGUS, Latr.

O. nuchicornis, Linn.

Camden, rare—Wenzel, Liebeck.

O. hecate, Panz.

Generally distributed, common—Wenzel, Liebeck. Brigantine Beach, in September—Hamilton. Newark. Madison. Caldwell, common—Crane.

O. janus, Panz.

Generally distributed throughout the State; common.

Var. striatulus, Beauv.

Brigantine Beach, in September—Hamilton.

O. tuberculifrons, Harold.

Brigantine Beach, in September—Hamilton.

O. pennsylvanicus, Harold.

Common throughout the State.

REYSSEMUS, Muls.

R. scaber, Hald.

Atlantic and Cape May counties, common—Wenzel. Atlantic City, not uncommon—Liebeck. Brigantine Beach, salt marshes, in September—Hamilton.

ATÆNIUS, Harold.

A. cognatus, Lec.

Brigantine Beach, in September, common—Hamilton.

A. wenzeli, Horn.

Atlantic county, rare—Wenzel. Brigantine Beach, in September, not rare—Hamilton.

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A. strigatus, Horn.

Brigantine Beach, in September—Hamilton.

A. gracilis, Melsh.

Brigantine Beach, in September—Hamilton.

A. imbricatus, Melsh.

New Jersey—Collection Dr. Horn.

A. stercorator, Fabr.

Newark. New Brunswick.

A. socialis, Horn.

Atlantic county, rare—Wenzel.

APHODIUS, III.

A. fossor, Linn.

Hudson county—Linell.

A. fimetarius, Linn.

Common all over the State.

A. ruricola, Melsh.

Generally distributed, rare—Liebeck.

A. granarius, Linn.

Common all over the State.

A. vittatus, Say.

Generally distributed, common—Liebeck. Atlantic county,
rare—Wenzel. Newark.

A. inquinatus, Hbst.

Common all over the State.

A. rubeolus, Beauv.

Landisville, Camden, common—Liebeck.

A. stercorosus, Melsh.

Generally distributed, common—Liebeck. Not common—
Wenzel.

A. bicolor, Say.

Westville, not uncommon—Liebeck.

A. phalerioides, Horn.

Atlantic and Cape May counties, not common—Wenzel. Atlantic City, not rare—Liebeck. Brigantine Beach, in September, not frequent—Hamilton. Anglesea, in July—Schwarz.

A. femoralis, Say.

Generally distributed, not uncommon—Wenzel, Liebeck.

A. parvus, Horn.

Anglesea—Wenzel.

BOLBOCERAS, Kirby.

B. faretus, Fabr.

Generally distributed, rare—Wenzel. Atlantic City, rare—Liebeck. Newark. Caldwell, rare—Crane. Madison.

B. lazarus, Fabr.

Generally distributed, rare—Wenzel. Sea-shore, not uncommon—Liebeck.

ODONTÆUS, Kl.

O. filicornis, Say.

Atlantic City, rare—Liebeck. Ocean Beach—Paulmier.

O. cornigerus, Melsh.

New Jersey—Linell.

GEOTRUPES, Latr.

G. splendidus, Fabr.

Generally distributed, rather common—Wenzel, Liebeck. Madison. Caldwell, rare since 1887—Crane.

G. semiopacus, Jek.

Atlantic City, rare—Liebeck. Newark. Madison.

G. egeriei, Germ.

Generally distributed, not uncommon—Wenzel. Camden, rare—Liebeck.

G. blackburnii, Fabr.

Rather common throughout the State.

G. balyi, Jek.

Gloucester county, rare—Wenzel. Westville, rare—Liebeck.

TROX, Fabr.

T. scabrosus, Beauv.

Generally distributed, not common—Wenzel. Atlantic City, not rare—Liebeck. Brigantine Beach, in September, frequent—Hamilton.

T. asper, Lec.

Brigantine Beach, in September, in carcasses—Hamilton.

T. suberosus, Fabr.

Generally distributed, not uncommon—Wenzel, Liebeck.

T. tuberculatus, De G.

Recorded on the Newark list. Caldwell, rare—Crane.

T. erinaceus, Lec.

Generally distributed, not rare—Wenzel, Liebeck. Hudson county—Linell.

T. unistriatus, Beauv.

Generally distributed, not uncommon—Liebeck.

T. sordidus, Lec.

Westville, rare—Liebeck. Madison—Paulmier.

T. foveicollis, Harr.

Generally distributed, rare—Liebeck.

T. terrestris, Say.

Hudson county—Linell.

T. scaber, Linn.

Generally distributed, not uncommon—Wenzel.

T. atrox, Lec.

New Jersey—Henshaw.

AMPHICOMA, Latr.

A. lupina, Lec.

Sea-shore, rare—Liebeck.

A. vulpina, Hentz.

Recorded on the Newark list.

HOPLIA, Ill.

H. trifasciata, Say.

Sea-shore, rare—Liebeck. In my experience, occurs very early in spring.

H. trivialis, Harold.

Sea-shore, rare—Liebeck.

H. modesta, Hald.

Generally distributed, common—Wenzel. Sea-shore, not uncommon—Liebeck. Newark.

DICHELONYCHA, Kirby.

D. elongata, Fabr.

Generally distributed, rare—Wenzel. Westville, not uncommon—Liebeck. Newark.

D. fuscula, Lec.

Gloucester, rare—Liebeck.

D. albicollis, Burm.

Generally distributed, common—Wenzel. Westville, not rare—Liebeck.

SERICA, MacL.

S. vespertina, Gyll.

Common throughout the State.

S. iricolor, Say.

Dacosta, rare—Liebeck. Atlantic county, common—Wenzel. Ocean county, on Scrub Oak, not rare—Smith.

S. sericea, Illiger.

Common throughout the State.

S. trociformis, Burm.

Atlantic county, common—Wenzel. Landisville, not uncommon—Liebeck. Ocean county, not rare on Scrub Oak, in May.

MACRODACTYLUS, Latr.

M. subspinosus, Fabr.

The well-known "rose bug;" common all over the State.

DIPLOTAXIS, Kirby.

D. sordida, Say.

Generally distributed, not common—Wenzel. Sea-shore, not uncommon—Liebeck.

D. liberta, Germ.

Sea-shore, common—Wenzel, Liebeck. Newark. Madison.

D. frondicola.

New Jersey—Linell.

LAOHNOSTERNA, Hope.

L. glaberrima, Blanch.

Brigantine Beach, September 10th—Hamilton. Anglesea, in July—Schwarz. New Jersey specimens are in the Collection United States National Museum, without exact locality.

L. ephilida, Say.

I have taken it during the present season (1889) in small numbers. Generally distributed—Liebeck, Wenzel.

L. clemens, Horn.

There is a single specimen marked "New Jersey" in the Collection United States National Museum, but the locality may be erroneous.

L. dispar, Burm.

Camden and Gloucester counties, not common—Wenzel.

L. gracilis, Burm.

Rather uncommon near New Brunswick. Sea-shore, rare—Liebeck. Camden and Gloucester counties, not rare—Wenzel.

L. gibbosa, Burm.

Common at New Brunswick, in June. Camden and Gloucester counties, not rare—Wenzel.

L. subpruinosa, Casey.

Not actually recorded from New Jersey, but it has been taken near Philadelphia and on Long Island.

L. inversa, Horn.

I took one specimen in Ocean county. It does not occur near Newark, apparently, and it is not in the Philadelphia collections from New Jersey. It is probably confined to the southern counties.

L. micans, Knoch.

Common locally, and generally distributed. Newark. Westville—Liebeck. Camden and Gloucester counties, common—Wenzel.

L. arcuata, Smith.

I have taken two specimens in Ocean county. It appears to belong to the southern counties.

L. insperata, Smith.

Snake Hill, New Jersey ; apparently rare.

L. dubia, Smith.

The common form in Ocean county. The only *fusca* form taken at New Brunswick, and I have seen it from the vicinity of Jersey City.

L. fusca, Fröehl.

The common form near Jersey City and Newark, and probably throughout the northern part of the State. Camden and Gloucester counties—Wenzel.

L. grandis, Smith.

Rare near Jersey City, and probably found in small numbers throughout the State. Camden and Gloucester counties—Wenzel.

L. fraterna, Harris.

Var. cognata, Burm.

Var. forsteri, Burm.

I have taken all forms of this species in the State, probably all near Jersey City. Camden and Gloucester counties—Wenzel.

L. nova, Smith.

I have not seen it from the State, but have taken it on Long Island, and have no doubt it occurs with us.

L. knochii, Gyll.

Camden and Gloucester counties, very rare—Wenzel. River-ton—Castle.

L. rugosa, Mels.

Sea-shore, rare—Liebeck. Camden and Gloucester counties—Wenzel.

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L. hirsuta, Knoch.

Not common; generally distributed. Rare, Westville—Liebeck. Camden and Gloucester counties—Wenzel.

L. balia, Say.

I have taken this in the State. Exact locality unknown.

L. hirticula, Knoch.

Common everywhere. I took it at New Brunswick this season.

L. crenulata, Fröhl.

Not common. I have taken it near Jersey City. Camden and Gloucester counties—Wenzel.

L. ilicis, Knoch.

Not rare. A few specimens near Jersey City. Newark. Generally distributed, moderately abundant—Liebeck, Wenzel.

L. quercus, Knoch.

Rare. Isolated specimens from different localities seen.

L. tristis, Fabr.

Common everywhere in the State.

In this list I have added two species not actually taken in the State, but which are so distributed faunally that their occurrence is almost a certainty. Two other species—

L. marginalis, Lec.

L. villifrons, Lec.—

Are also almost certain to occur. My collection, now in the United States National Museum, contained many specimens collected by me in this State, and from my paper in the Proceedings United States National Museum for 1888, these localities are taken.

PHYTALUS, Er.

P. georgianus, Horn.

Hammonton, a single specimen only—Schwarz.

POLYPHYLLA, Harr.

P. variolosa, Hentz.

Atlantic county, rare—Wenzel. Atlantic City, rare—Liebeck. Sandy Hook, rather commonly washed up on the shore—Smith.

ANOMALA, Kœppe.**A. binotata, Gyll.**

Generally distributed, common—Wenzel, Liebeck.

A. minuta, Burm.

Anglesea, not uncommon—Liebeck.

A. undulata, Melsh.

New Jersey—Linell. Rare near Fort Lee—Smith.

A very distinctly varietal form occurs at Anglesea; taken by Mr. Wenzel.

A. lurida, Fabr.

Atlantic City—Castle.

A. lucicola, Fabr.

More or less common all over the State.

A. oblivia, Horn.

Generally distributed; common. Dacosta, Landisville, common—Liebeck.

A. marginata, Fabr.

Generally distributed, rare—Wenzel. Sea-shore, rare—Liebeck.

STRIGODERMA, Burm.**S. pygmæa, Fabr.**

Generally distributed, not uncommon—Liebeck. Common in May and June—Wenzel. Madison.

S. arboricola, Fabr.

Generally distributed, common—Wenzel, Liebeck. Newark. Monmouth county, in July, not common—Smith. Caldwell, common—Crane.

PELIDNOTA, MacL.**P. punctata, Linn.**

Common on grape vines all over the State.

COTALPA, Burm.**C. lanigera, Linn.**

Occurs throughout the State; usually not common. Feeds on a Swamp Willow.

CYCOLOEPHALA, Latr.

C. immaculata, Oliv.

Generally distributed, common—Wenzel. Sea-shore, not rare—Liebeck

C. villosa, Burm.

A specimen in a Newark collection is referable here.

C. puberula, Lec.

Atlantic City—Castle.

CHALEPUS, MacL.

C. trachypygus, Burm.

Generally distributed, common—Liebeck, Wenzel. Brigantine Beach, in September, come to light abundantly—Hamilton. Newark. Madison.

LIGYRUS, Burm.

L. gibbosus, De G.

Sea-shore, common—Wenzel, Liebeck. Brigantine Beach, in September, come to light abundantly—Hamilton. Newark. Caldwell, common—Crane.

L. relictus, Say.

Atlantic City, rare—Liebeck. Sea-shore, not rare—Wenzel. Newark. Caldwell, common—Crane. Madison.

L. rugiceps, Lec.

Caldwell, common—Crane.

APHONUS, Lec.

A. castaneus, Melsh.

Atlantic City, rare—Liebeck. Sea-shore, not rare—Wenzel. Anglesea, in July—Smith. Newark. Madison.

XYLORYCTES, Hope.

X. satyrus, Fabr.

Generally distributed, locally common—Liebeck, Wenzel. Newark. Feeds in roots of Ash.

STRATEGUS, Hope.**S. antæus**, Fabr.

Atlantic and Cape May counties, not rare—Wenzel. Westville, not rare—Liebeck. On the Newark list.

PHILEURUS, Latr.**P. truncatus**, Beauv.

On the Newark list.

ALLORHINA, Burm.**A. nitida**, Linn.

Generally distributed, common—Wenzel, Liebeck. Newark. Cape May, in July—Schwarz. Long Branch, rare—Crane.

EUPHORIA, Burm.**E. areata**, Fabr.

Westville, not uncommon—Liebeck. Gloucester, Atlantic and Cape May counties, very local—Wenzel. Brigantine Beach, in September, abundant once, but none have occurred the past five years—Hamilton.

E. sepulchralis, Fabr.

Generally distributed, not common—Wenzel.

E. fulgida, Fabr.

Generally distributed—Liebeck. Locally common—Wenzel. Newark. Caldwell, rare until three years ago—Crane.

E. herbacea, Oliv.

Generally distributed, not common—Wenzel. Westville, rare—Liebeck.

E. inda, Linn.

Occurs throughout the State, in fall and early in spring.

CREMASTOCHILUS, Knoch.**C. pilosicollis**, Horn.

On the Newark list.

C. variolosus, Kirby.

Westville, rare—Liebeck. Gloucester county, rare—Wenzel. Madison—Paulmier.

O. harrisii, Kirby.

Woodbury, rare—Liebeck. Gloucester county, rare—Wenzel.

OSMODERMA, Knoch.

O. eremicola, Knoch.

Generally distributed, not rare—Wenzel. Westville, not uncommon—Liebeck. Newark. Madison. Caldwell, common—Crane.

O. scabra, Beauv.

Generally distributed, not rare—Wenzel. Sea-shore, rare—Liebeck. Newark. Madison. Caldwell, rare—Crane.

GNORIMUS, Lap.

G. maculosus, Knoch.

Generally distributed, rare—Wenzel. Sea-shore, rare—Liebeck.

TRICHIUS, Fabr.

T. piger, Fabr.

Occurs rather commonly all over the State.

T. affinis, Gory.

Occurs with the preceding.

T. delta, Först.

Williamstown, Dacosta, rare—Wenzel.

VALGUS, Scriba.

V. squamiger, Beauv.

Occurs rather commonly throughout the State.

Family SPONDYLIDÆ.

PARANDRA, Latr.

P. brunnea, Fabr.

Occurs rather commonly throughout the State.

Family CERAMBYCIDÆ.**ORTHOSOMA, Serv.****O. brunneum, Först.**

Not uncommon throughout the State.

PRIONUS, Geoff**P. laticollis, Dru.**

Not uncommon throughout the State. Rare at Caldwell—Crane.

P. pocularis, Dalm.

Landisville, not uncommon—Liebeck. Atlantic and Cape May counties, not rare—Wenzel. Cape May, in July—Schwarz.

*** TRAGOSOMA, Serv.****T. harrisii, Lec.**

On the Newark list. I have found it along shore, cast up by the tide.

SPHENOSTETHUS, Hald.**S. taslei, Buq.**

New Jersey, rare, not taken recently—Liebeck. One specimen in Collection Dr. Horn, marked "New Jersey."

ASEMUM, Esch.**A. moestum, Hald.**

Not rare throughout the State. Rare at Caldwell—Crane.

CRIOCEPHALUS, Muls.**C. agrestis, Kirby.**

Brigantine Beach, in September, rare—Hamilton.

C. obsoletus, Rand.

Generally distributed, rather common—Wenzel, Liebeck. Brigantine Beach, in September, not common—Hamilton. Newark.

SMODIUM, Hald.**S. cucujiforme, Say.**

Generally distributed, not rare—Liebeck. Camden and Gloucester counties, rare—Wenzel. Newark.

PHYSOCNEMUM, Hald.

P. brevilineum, Say.

Atlantic and Cape May counties, common—Wenzel. Sea-shore, moderately abundant—Liebeck. Newark.

HYLOTRUPES, Serv.

H. bajulus, Linn.

Quite generally distributed throughout the State; not uncommon.

H. ligneus, Fabr.

Generally distributed, common, feeds on Cedar—Wenzel. Dacosta, not uncommon—Liebeck. Newark.

PHYMATODES, Muls.[†]

P. variabilis, Fabr.

Common throughout the State.

P. amœnus, Say.

Westville, rare—Liebeck. In Grape, not common—Wenzel. I bred quite a number from grape stems this spring. Caldwell, common—Crane. Madison.

P. varius, Fabr.

Not uncommon throughout the State.

CALLIDIUM, Fabr.

C. antennatum, Newn.

Common throughout the State.

CEME, Newn.

O rigida, Say.

Generally distributed, rare—Wenzel. Sea-shore, rare—Liebeck, Anglesea, in July—Schwarz. Newark.

CHION, Newn.

C. cinctus, Dru.

Not rare, generally distributed—Wenzel.

EBURIA, Serv.

E. 4-geminata, Say.

Generally distributed, rare—Liebeck.

ROMALEUM, White.

R. simplicicolle, Hald.

Atlantic county, common—Wenzel. Sea-shore, rather common—Liebeck. Newark.

R. atomarium, Dru.

Generally distributed, not common—Wenzel. Dacosta, not uncommon—Liebeck.

R. rufulum, Hald.

Westville, rare—Liebeck. Camden and Gloucester counties, rare—Wenzel. Hudson county—Linell. Newark.

ELAPHIDION, Serv.

E. mucronatum, Fabr.

Common throughout the State. Rare at Caldwell—Crane.

E. incertum, Newn.

On the Newark list.

E. villosum, Fabr.

Not uncommon throughout the State. Larvæ in Oak.

E. parallelum, Newn.

Same as the preceding and equally common.

E. aculeatum, Lec.

Generally distributed, rare—Liebeck.

E. unicolor, Rand.

Camden and Gloucester counties, rare—Wenzel. Westville, common—Liebeck.

TYLONOTUS, Hald.

T. bimaculatus, Hald.

Camden and Gloucester counties, rare—Wenzel. Westville, rare—Liebeck.

HETERACHTHES, Newn.

H. quadrimaculatus, Newn.

Generally distributed, rare—Liebeck. Gloucester and Camden counties, rare, in Hickory—Wenzel. Hudson county—Linell. Newark.

H. ebenus, Newn.

Atlantic county, rare—Wenzel. Westville, rare—Liebeck. Newark.

PHYTON, Newn.

P. pallidum, Say.

On the Newark list.

OBRIUM, Serv.

O. rubrum, Newn.

New Jersey, rare, not taken recently—Liebeck.

O. rubidum, Lec.

New Jersey, rare, not taken recently—Liebeck.

MOLORCHUS, Fabr.

M. bimaculatus, Say.

Not rare throughout the State.

RHOPALOPHORA, Serv.

R. longipes, Say.

Sea-shore, not uncommon—Liebeck.

TRAGIDION, Serv.

T. coquus, Lec.

Generally distributed, more common in Atlantic and Cape May counties—Wenzel. Sea-shore, not uncommon—Liebeck. Brigantine Beach, in September, a few specimens washed up—Hamilton. Caldwell, rare—Crane.

PURPURICENUS, Serv.

P. humeralis, Say.

Generally distributed, common—Wenzel. Sea-shore, common—Liebeck. Newark. New Jersey—Linell.

BATYLE, Thom.**B. suturalis, Say.**

Generally distributed and not uncommon throughout the State.

STENOSPHEENUS, Hald.**S. notatus, Oliv.**

Generally distributed, common—Wenzel. Westville, rare—Liebeck.

CYLLENE, Newn.**C. pictus, Dru.**

Generally distributed, rare—Wenzel, Liebeck. Caldwell, rare—Crane. Bores in Hickory, and emerges in spring.

C. robiniae, Först.

Found throughout the State commonly. Lives in Locust, and emerges in fall.

PLAGIONOTUS, Muls.**P. speciosus, Say.**

"Snake Hill, on Oak trees in every instance. There are very few Maples left there, so it possibly really lives in Oak too"—Linell. Newark. Madison.

CALLOIDES, Lec.**C. nobilis, Say.**

Generally distributed, locally common, abundant on the shore—Wenzel. Sea-shore, rather common—Liebeck. Newark.

ARHOPALUS, Serv.**A. fulminans, Fabr.**

Found throughout the State, but rarely common.

XYLOTRECHUS, Chevr.**X. colonus, Fabr.**

Common throughout the State.

X. sagittatus, Germ.

Generally distributed, rare—Wenzel.

X. quadrimaculatus, Hald.

Brigantine Beach, in September, one specimen—Hamilton.

X. undulatus, Say.

Newark. Not rare in the Orange Mountains.

Var. lunulatus, Kirby.

On the Newark list.

NEOLYTUS, Thom.

N. scutellaris, Oliv.

Generally distributed, rare—Wenzel.

N. luscus, Fabr.

Generally distributed, rare—Wenzel.

N. capræa, Say.

Generally distributed, rare—Wenzel. Newark.

N. erythrocephalus, Fabr.

Rather common throughout the State.

CLYTANTHUS, Thom.

C. ruricola, Oliv.

New Jersey, not taken recently—Liebeck.

CYRTOPHORUS, Lec.

C. verrucosus, Oliv.

Camden and Gloucester counties, rare—Wenzel. Caldwell,
rare—Crane.

EUDEROES, Lec.

E. picipes, Fabr.

Generally distributed, common—Wenzel, Liebeck. Newark.
Orange Mountains, not rare—Smith.

E. pini, Oliv.

Landisville, not uncommon—Liebeck. Newark. Caldwell,
rare—Crane.

ATIMIA, Hald.

A. confusa, Say.

Gloucester and Camden counties, rare, in Cedar—Wenzel.
Atco, rare—Liebeck.

DISTENIA, Serv.

D. undata, Oliv.

Westville, rare—Liebeck. Hudson county—Linell. Newark.

DESMOCERUS, Serv.**D. palliatus, Först.**

Found throughout the State, on Elder ; not rare.

ENCYCLOPS, Newn.**E. cœruleus, Say.**

Gloucester, not uncommon—Liebeck.

RHAGIUM, Fabr.**R. lineatum, Oliv.**

Generally distributed, common—Wenzel, Liebeck. Newark.

CENTRODERA, Lec.**C. decolorata, Harr.**

I found one specimen in this State, years ago ; exact locality I do not now remember.

C. picta, Hald.

Recorded on the Newark list.

TOXOTUS, Serv.**T. cylindricollis, Say.**

New Jersey—Collection Dr. Horn.

ACMÆOPS, Lec.**A. bivittata, Say.**

Generally distributed, not uncommon—Liebeck. Newark.

A. directa, Newn.

Westville, rare—Liebeck.

A. discoidea, Hald.Sea-shore, rare—Liebeck. New Jersey—Collection Dr. Horn.
Atlantic City—Castle.**GAUROTUS, Lec.****G. cyanipennis, Say.**

Generally distributed, not common—Wenzel, Liebeck. Hudson county—Linell. Newark. Caldwell, rare—Crane.

STRANGALIA, Serv.

S. famelica, Newn.

Found throughout the State, not rarely.

S. acuminata, Oliv.

Westville, rare—Liebeck. New Jersey—Linell. Newark.

S. luteicornis, Fabr.

Found throughout the State, not rarely.

S. bicolor, Swed.

Generally distributed, rare—Wenzel. Anglesea, rare—Liebeck. Newark.

TYPOCERUS, Lec.

T. zebratus, Fabr.

Landisville, rare—Liebeck.

T. velutinus, Oliv.

Common throughout the State.

T. lugubris, Say.

New Jersey—Henshaw.

LEPTURA, Serv.

L. emarginata, Fabr.

Newark. Trenton ; one specimen some years ago. Fort Lee.

L. deleta, Lec.

New Jersey, rare, not taken recently—Liebeck.

L. plebeja, Rand.

New Jersey—Collection Dr. Horn. Caldwell, rare—Crane.

L. abdominalis, Hald.

Sea-shore, rare—Liebeck. Atlantic City—Castle.

L. lineola, Say.

Rather common throughout the State.

L. hæmatites, Newn.

Westville, not rare—Liebeck. Newark.

L. zebra, Oliv.

Not rare throughout the State.

L. cordifera, Oliv.

Newark. New Jersey—Collection Dr. Horn.

L. rubrica, Say.

Rather common throughout the State.

L. circumdata, Oliv.

Atco, rare—Liebeck. Newark.

L. vagans, Oliv.

Specimens are in the Newark collections.

L. proxima, Say.

Westville, rare—Liebeck.

L. octonotata, Say.

On the Newark list.

L. vittata, Germ.

Generally distributed, not rare—Liebeck. Newark. Rather common near Montclair—Smith. Caldwell, very rare—Crane.

L. pubera, Say.

On the Newark list.

CYRTINUS, Lec.**C. pygmæus**, Hald.

Camden and Gloucester counties, rare—Wenzel. Atco, rare—Liebeck. Hudson county—Linell. Newark.

PSENOCORUS, Lec.**P. supernotatus**, Say.

Occurs throughout the State, though not common.

MONOHAMMUS, Serv.**M. titillator**, Fabr.

Rather common throughout the State.

M. confusa, Kirby.

Atlantic and Cape May counties, rare—Wenzel. Camden, rare—Liebeck. Newark.

DORCASHEMA, Lec.**D. alternatum**, Say.

Generally distributed, not rare—Liebeck.

D. nigrum, Say.

Westville, rare—Liebeck. Caldwell, rare—Crane. Madison.

HETÆMIS, Hald.

H. cinera, Oliv.

Generally distributed, not uncommon—Liebeck. Newark.

OACOPLIA, Lec.

O. pullata, Hald.

Gloucester and Atlantic counties, rare—Wenzel.

GOES, Lec.

G. tigrina, De G.

Newark, rare. Caldwell, one specimen—Crane.

G. pulchra, Hald.

Gloucester and Camden counties, rare—Wenzel. Westville,
rare—Liebeck. Hudson county—Linell. Newark.

G. debilis, Lec.

Camden and Gloucester, rare—Wenzel. Dacosta, not uncommon—Liebeck.

G. tessellata, Hald.

Gloucester, rare—Wenzel. Newark.

G. pulverulentus, Hald.

Gloucester and Atlantic counties, rare—Wenzel. Camden,
rare—Liebeck. Newark.

ACANTHODERES, Serv.

A. quadrigibbus, Say.

Northern Jersey, rare—Liebeck. Newark. Caldwell, rare—
Crane.

A. decipiens, Hald.

Gloucester and Camden counties, rare—Wenzel. Sea-shore,
not rare—Liebeck. Newark. Hudson county.

LEPTOSTYLUS, Lec.

L. aculiferus, Say.

Generally distributed, not rare—Wenzel. Sea-shore, rare—
Liebeck.

L. commixtus, Hald.

Generally distributed, not rare—Wenzel.

L. biustus, Lec.

Anglesea, in July—Schwarz.

L. collaris, Hald.

Hudson county—Linell.

L. macula, Say.

Generally distributed, rather common—Wenzel, Liebeck.
Madison. Caldwell, rare—Crane.

LIOPUS, Serv.

L. crassulus, Lec.

Madison—Paulmier.

L. variegatus, Hald.

Generally distributed, not rare—Wenzel. Atco, rare—Liebeck.

L. fascicularis, Harris.

On the Newark list.

L. alpha, Say.

Occurs quite commonly throughout the State.

L. cinereus, Lec.

Generally distributed, rather common—Liebeck. Hudson county—Linell.

L. punctatus, Lec.

A single specimen in Mr. Bischoff's collection, Newark.

DEOTES, Lec.

D. spinosus, Say.

Atco, rare—Liebeck. Newark. Madison.

LEPTURGES, Bates.

L. symmetricus, Hald.

Hudson county—Linell.

Var. angulatus, Lec.

Generally distributed, not common—Wenzel, Liebeck.

L. signatus, Lec.

Hudson county—Linell. Newark. Caldwell, rare—Crane.

L. querci, Fitch.

Not rare throughout the State.

L. facetus, Say.

Hudson county—Linell. Orange Mountains—Smith. Caldwell, rare—Crane.

HYPERPLATYS, Bates.

H. aspersus, Say.

Not rare throughout the State.

H. maculatus, Hald.

Occurs, not rarely, throughout the State.

UROGRAPHIS, Horn.

U. fasciatus, De G.

Atlantic and Cape May counties, common—Wenzel. Hudson county—Linell. Caldwell, common—Crane.

GRAPHISURUS, Kirby.

G. pusillus, Kirby.

Atlantic and Cape May counties, common—Wenzel. Newark.

ACANTHOOCINUS, Steph.

A. obsoletus, Oliv.

Generally distributed, rare—Wenzel.

A. nodosus, Fabr.

Egg Harbor, September, rare—Wenzel. Atco, rare—Liebeck.

DECTES, Lec.

D. spinosus, Say.

Caldwell, common—Crane.

POGONOCHERUS, Latr.

P. mixtus, Hald.

Generally distributed, not rare—Wenzel. Sea-shore, not uncommon—Liebeck. Newark.

BOYRUS, Lec.**E. dasycerus, Lec.**

Generally distributed, common—Liebeck. Anglesea, in July
—Schwarz. Newark.

EUPOGONIUS, Lec.**E. tomentosus, Hald.**

Generally distributed, common—Wenzel, Liebeck. Cape May
Court House, in July—Schwarz. Newark.

E. vestitus, Say.

Generally distributed, not uncommon—Liebeck.

ONCIDERES, Serv.**O. cingulata, Say.**

Camden, rare, not taken recently—Liebeck. New Jersey—
Collection Dr. Horn.

HIPPOPSIS, Serv.**H. lemniscata, Fabr.**

Westville, rare—Liebeck.

SAPERDA, Fabr.**S. obliqua, Say.**

Gloucester and Camden counties, rare, on Black Alder—
Wenzel. Westville, rare—Liebeck. Newark. Orange Moun-
tains, rare—Linell.

S. calcarata, Say.

Newark. Not rare near the Hudson—Smith.

S. mutica, Say.

Gloucester, on Willow, rare—Wenzel. Caldwell, rare—Crane.

S. candida, Fabr.

Atco, rare—Liebeck. Hudson county—Linell. Newark.
Madison, larvæ in Apple trees. I have taken it in Warren
county, on Pear, have received it from Newark on Quince, and
have taken the imago abundantly on Thorn, back of Jersey City
Heights—Smith. Caldwell, common—Crane.

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S. fayi, Bland.

New Jersey—Linell.

S. vestita, Say.

Rather common, bores in Linden—Wenzel. Camden, rare—Wenzel. Hudson county, rather common—Linell. Newark. Caldwell, common—Crane.

S. discoidea, Fabr.

Generally distributed, not rare, larvæ in Hickory—Wenzel. Camden, not uncommon—Liebeck. Newark.

S. tridentata, Oliv.

Hudson county—Linell. Newark, Caldwell, common—Crane.

S. lateralis, Fabr.

On Hickory, common—Wenzel. Westville, not uncommon—Liebeck. Hudson county—Linell. Newark. Madison.

S. puncticollis, Say.

Camden and Gloucester counties, rare, on *Rhus radicans*—Wenzel. Camden, rare—Liebeck. Hudson county—Linell. Newark.

S. concolor, Lec.

Hudson county—Linell. Newark.

OBERA, Muls.

O. bimaculata, Oliv.

Hudson county—Linell.

Var. tripunctata, Fabr.

Atco, Dacosta, not uncommon—Liebeck. Newark. Greenwood Lake, rare—Crane. Madison.

O. schaumii, Lec.

On the Newark list.

O. ocellata, Hald.

Atlantic county, rare—Wenzel. Hudson county—Linell. Newark.

O. tripunctata, Swed.

Rather common throughout the State.

O. gracilis, Fabr.

Dacosta, rare—Liebeck.

O. ruficollis, Fabr.

Atlantic and Gloucester counties, rare—Wenzel. Dacosta,
Landisville, rare—Liebeck. Madison.

TETROPS, Steph.

T. canescens, Lec.

Gloucester county, on Black Alder, rare—Wenzel.

TETRAOPES, Serv.

T. discoideus, Lec.

Gloucester, common—Liebeck.

T. canteriator, Drap.

Common throughout the State, but rather local.

T. tetraophthalmus, Först.

Common throughout the State, on *Asclepias* (Milk Weed).

DYSPHAGA, Lec.

D. tenuipes, Hald.

Gloucester, very rare—Wenzel.

Family CHRYSOMELIDÆ.

DONACIA, Fabr.

D. palmata, Oliv.

Camden and Gloucester counties, not rare—Wenzel.

D. proxima, Kirby.

Hudson county—Linell. Madison.

D. distincta, Lec.

Hudson county—Linell.

D. subtilis, Kunze.

Hudson county—Linell.

D. æqualis, Say.

Camden and Gloucester counties—Wenzel.

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D. torosa, Lec.

Camden and Gloucester counties, not rare—Wenzel.

D. emarginata, Kirby.

Camden and Gloucester counties, not rare—Wenzel.

D. cuprea, Kirby.

New Jersey—Collection Dr. Horn.

D. kirbyi, Lec.

Atlantic City—Castle.

ORSODACHNA, Latr.

O. atra, Ahr.

Newark. I have found it quite commonly very early in spring, on blossoms.

ZEUGOPHORA, Kunze.

Z. consanguinea, Cr.

Newark. A specimen named by myself.

Z. varians, Cr.

Newark—Bischoff.

SYNETA, Esch.

S. ferruginea, Germ.

Hudson county—Linell. Newark.

LEMA, Fabr.

L. brunnicollis, Lac.

Hudson county—Linell.

L. collaris, Say.

On the Newark list.

L. trilineata, Oliv.

Occurs throughout the State, but scarcely common.

CRIO CERIS, Geoff.

C. asparagi, Linn.

Common wherever *Asparagus* is raised; often very injurious.

ANOMCEA, Lac.**A. laticlavata**, Först.

Occurs throughout the State; usually not common.

COSCINOPTERA, Lac.**C. dominicana**, Fabr.Dacosta, not common—Liebeck, Wenzel. Hudson county—
Linell. Newark.**BABIA, Chevr.****B. quadriguttata**, Oliv.

Atco, not rare—Liebeck. Orange Mountains, rare—Smith.

SAXINIS, Lac.**S. omogera**, Lec.

Newark. Determined by myself.

OHLAMYS, Knoch.**O. polycocca**, Lac.

Generally distributed, rare—Wenzel.

O. plicata, Fabr.

Hudson county—Linell.

O. foveolata, Knoch.

On the Newark list.

EXEMA, Lac.**E. gibber**, Oliv.Generally distributed, not common—Liebeck, Wenzel. New-
ark.**BASSAREUS, Hald.****B. formosus**, Melsh.Generally distributed, not rare—Wenzel. Hudson county—
Linell. Newark. Ocean county—Smith.**B. mammiifer**, Newn.

Generally distributed, not rare—Wenzel.

Var. luteipennis, Melsh.

Hudson county—Linell.

B. lituratus, Fabr.

Not rare throughout the State.

Var. recurvus, Say.

Generally distributed—Wenzel.

Var. lativittis, Germ.

Newark. Determined by myself.

CRYPTOCEPHALUS, Geoff.

C. mucoreus, Lec.

Orange Mountains, taken rarely—Smith.

C. 4-maculatus, Say.

Hudson county—Linell. Newark. Ocean county—Smith.

Var. notatus, Fabr.

Generally distributed—Wenzel.

C. quadruplex, Newn.

Hudson county—Linell. Ocean county—Smith.

C. guttulatus, Oliv.

Generally distributed—Wenzel. Newark.

C. leucomelas, Suffr.

Camden county, rare, on Poplar—Wenzel.

C. venustus, Fabr.

Common throughout the State.

Var. ornatus, Fabr.

Anglesea, in July—Schwarz. Caldwell, rare—Crane.

C. nsertus, Hald.

Generally distributed, not rare—Wenzel. Newark.

C. calidus, Suffr.

Hudson county—Linell.

C. gibbicollis, Hald.

Generally distributed—Wenzel.

C. incertus, Oliv.

Generally distributed—Wenzel.

C. mutabilis, Melsh.

Newark. Determined by myself.

C. badius, Suffr.

Caldwell, common—Crane.

C. schreibersii, Suffr.

Hudson county—Linell. Ocean county—Smith.

C. striatulus, Lec.

Hudson county—Linell. Newark—Bischoff.

PACHYBRACHYS, Chev.

P. morosus, Hald.

Generally distributed, not rare—Wenzel.

P. abdominalis, Say.

Generally distributed, not rare—Wenzel.

P. othonus, Say.

Hudson county—Linell. Newark. Orange Mountains, quite common—Smith.

P. trinotatus, Melsh.

Generally distributed, not rare—Wenzel. Hudson county—Linell.

P. intricatus, Suffr.

Not rare throughout the State. I have seen it from all quarters.

P. tridens, Melsh.

Hudson county—Linell. On Poison Ivy when in bloom, not rare—Wenzel.

P. luridus, Fabr.

Hudson county—Linell.

P. atomarius, Melsh.

Generally distributed, not rare—Wenzel. Newark—Bischoff.

P. femoratus, Oliv.

Recorded on the Newark list.

P. subfasciatus, Hald.

New Jersey—Collection Dr. Horn.

P. dilatatus, Suffr.

New Jersey—Collection Dr. Horn.

MONACHUS, Chevr.

M. ater, Hald.

New Jersey—Henshaw.

DIACHUS, Lec.

D. auratus, Fabr.

Anglesea, in July—Schwarz. Orange Mountains, common—Smith.

TRIACHUS, Lec.

T. atomus, Suffr.

Anglesea, in July—Schwarz.

XANTHONIA, Baly.

X. 10-notata, Say.

Common throughout the State.

X. villosula, Melsh.

New Jersey—Collection Dr. Horn.

X. stevensii, Baly.

Swampy meadows, not rarely—Smith.

FIDIA, Baly.

F. murina, Cr.

Generally distributed, not common—Wenzel. Newark.

F. longipes, Mels.

Common at Caldwell—Crane.

ADOXUS, Kirby.

A. vitis, Linn.

Madison—Paulmier. I have received this also from Southern Jersey.

GLYPTOSCELIS, Lec.

G. hirtus, Lec.

Generally distributed, rare—Wenzel. New Jersey—Collection Dr. Horn.

G. barbatus, Say.

Generally distributed, common—Wenzel.

CHRYSOCHUS, Chev.**C. auratus, Fabr.**

Locally common throughout the State.

TYMNES, Chap.**T. tricolor, Fabr.**

Not rare throughout the State.

PARIA, Lec.**P. 6-notata, Say.**

Common throughout the State; its varieties more rare. Brigantine Beach, in September, small variety—Hamilton.

P. aterrima, Oliv.

Also common throughout the State.

METACHROMA, Lec.**M. quercata, Fabr.**

Camden and Atlantic counties, rare—Wenzel. Orange Mountains, rare—Smith.

M. pallida, Say.

Anglesea, in July—Schwarz. New Jersey—Collection Dr. Horn. Ocean county, rare—Smith.

GRAPHOPS, Lec.**G. pubescens, Melsh.**

Hudson county—Linell. Newark. Caldwell, common—Crane.

G. curtipennis, Mels.

Ocean county, on cranberry bogs, in May—Smith.

G. nebulosus, Lec.

Generally distributed, common—Wenzel. Ocean county, in May, on cranberry bogs—Smith.

CHRYSODINA, Baly.**C. globosa, Say.**

Hudson county—Linell. Newark. Orange Mountains, quite common—Smith.

COLASPIS, Fabr.

C. brunnea, Fabr.

Not rare in Ocean county.

Var. flavida, Say.

Generally distributed, common—Wenzel. Newark.

Var. costipennis, Dej.

Rare near Jamesburg.

C. prætexta, Say.

Atlantic and Cape May counties, not common—Wenzel.
Newark—Bischoff.

C. tristis, Oliv.

On the Newark list.

Var. puncticollis, Say.

Generally distributed, common—Wenzel.

PRASOCURIS, Lat.

P. varipes, Lec.

Not uncommon throughout the State.

DORYPHORA, Ill.

D. clivicollis, Kirby.

More or less common throughout the State, on *Asclepias*.

D. 10-lineata, Say.

The well-known potato beetle; common everywhere.

CHRYSOMELA, Linn.

C. suturalis, Fabr.

Quite common throughout the State.

C. similis, Rog.

Generally distributed, common—Wenzel.

C. elegans, Oliv.

Quite common throughout the State.

C. lunata, Fabr.

Newark; rare. Caldwell, rare—Crane.

C. scalaris, Lec.

I have taken this in New Jersey, but do not recollect where.
Caldwell, rare—Crane.

C. philadelphica, Linn.

Generally distributed, common—Wenzel. Newark. Quite abundant in Ocean county. Caldwell, rare—Crane.

C. multipunctata, Say.

Newark. Orange Mountains, not rare—Smith. Caldwell, common—Crane.

PLAGIODERA, Redt.**P. viridis**, Melsh.

Orange Mountains, rare—Smith.

GASTROIDEA, Hope.**G. polygona**, Linn.

Common throughout the State.

G. cyanea, Melsh.

Quite common throughout the State.

LINA, Megerle.**L. lapponica**, Linn.

Generally distributed, common—Wenzel. Newark.

L. scripta, Fabr.

Generally distributed, common—Wenzel. Newark. I have bred this on Willow—Smith. Caldwell, common—Crane.

PHYLLODECTA, Kirby.**P. vulgatissima**, Linn.

Orange Mountains, not common—Smith. Madison.

CEROTOMA, Chevr.**C. caminea**, Fabr.

Quite abundant throughout the State.

LUPERUS, Geoff.**L. meraca**, Say.

New Jersey—Henshaw.

PHYLLOBROTICA, Redt.

P. discoidea, Fabr.

Gloucester, rare—Liebeck. Hudson county—Linell. Newark—Bischoff.

DIABROTICA, Chevr.

D. 12-punctata, Oliv.

D. vittata, Fabr.

Both species are extremely common throughout the State.

D. atripennis, Say.

Hudson county—Linell. Caldwell, rare—Crane.

TRIRHABDA, Lec.

T. tomentosa, Linn.

Newark. Orange Mountains, not rare—Smith. Madison.

Var. virgata, Lec.

Var. canadensis, Kirby.

With the type form, and sometimes replacing it.

ADIMONIA, Leach.

A. americana, Fabr.

Atlantic and Cape May counties, rare—Wenzel.

Var. cribrata, Lec.

Newark. Quite generally distributed, not rare—Smith.

A. rufosanguinea, Say.

Generally distributed, common—Wenzel. Newark.

A. conferta, Lec.

New Jersey—Henshaw.

A. cavicollis, Lec.

New Jersey—Henshaw.

GALERUCA, Geoff.

G. sagittariæ, Gyll.

Generally distributed, common—Wenzel. Caldwell, common—Crane. Madison.

G. decora, Say.

Anglesea, in July—Schwarz.

G. notata, Fabr.

Generally distributed, common—Wenzel. Newark. Caldwell, common—Crane.

G. xanthomelæna, Schr.

The elm-leaf beetle; quite generally distributed throughout the State.

G. integra, Lec.

Caldwell, rare—Crane.

G. maritima, Lec.

Common everywhere along shore.

BLEPHARIDA, Rog.

B. rhois, Först.

Generally distributed throughout the State, on Sumac, but not common.

HYPOLAMPSIS, Clark.

H. pilosa, Ill.

Atlantic county, not rare—Wenzel. Sea-shore, not uncommon—Liebeck.

PHÆDROMUS, Clark.

P. paradoxus, Mels.

Atlantic City—Castle.

ÆDIONYCHIS, Latr.

Æ. gibbitarsa, Say.

Generally distributed, not rare—Wenzel, Liebeck. Newark. Brigantine Beach, in September, abundant—Hamilton. New Brunswick.

Æ. thoracica, Fabr.

Generally distributed, not rare—Wenzel. Westville, rather common—Liebeck. Caldwell, rare—Crane. Newark.

Æ. vians, Illig.

Generally distributed, not rare—Wenzel. Rare—Liebeck. Caldwell, rare—Crane. Madison.

Æ. petaurista, Fabr.

Sea-shore, rare—Liebeck.

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Æ. miniata, Fabr.

Generally distributed—Wenzel. Anglesea, not uncommon—Liebeck.

Æ. sexmaculata, Illig.

Generally distributed, not common—Wenzel, Liebeck. Newark. Orange Mountains, not rare—Smith.

Æ. limbalis, Mels.

Ocean county, on cranberry bogs, in May, common—Smith.

Var. subvittata, Horn.

At same time and place, and equally common with the typical form—Smith.

Æ. suturalis, Fabr.

Atlantic county, not common—Wenzel. Newark.

Æ. quercata, Fabr.

Generally distributed, moderately abundant—Liebeck, Wenzel. Caldwell, rare—Crane.

Æ. scalaris, Mels.

Egg Harbor, rare—Liebeck.

DISONYCHA, Chevr.

D. pennsylvanica, Ill.

Generally distributed throughout the State; not rare.

Var. pallipes, Cr.

On the Newark list. New Jersey—Collection Dr. Horn.

D. crenicollis, Say.

Hudson county—Linell.

D. caroliniana, Fabr.

Hudson county—Linell. Newark. Westville, rare—Liebeck. Caldwell, rare—Crane.

D. glabrata, Fabr.

Hudson county—Linell. Newark.

D. triangularis, Say.

Generally distributed, rather common—Liebeck. Hudson county—Linell. Madison.

D. xanthomelæna, Dalm.

Generally distributed, rather common—Wenzel, Liebeck.
Hudson county—Linell. Newark.

D. mellicollis, Say.

Generally distributed, not rare—Wenzel. Hudson county—
Linell.

D. collata, Fabr.

Generally distributed, not rare—Liebeck. Hudson county—
Linell.

HALTICA, Geoffr.**H. bimarginata**, Say.

Newark. Determined by myself. New Jersey—Collection
Dr. Horn.

H. chalybea, Ill.

Common all over the State. The grape-vine flea beetle.

H. carinata, Germ.

Dacosta, rare—Liebeck.

H. ignita, Ill.

Not uncommon throughout the State.

H. marevagans, Horn.

Gloucester, Atlantic and Cape May counties, not uncommon—
Wenzel. Sea-shore, not uncommon—Liebeck. Anglesea, in
July—Smith. Newark. New Jersey—Linell.

H. fuscoænea, Melsh.

Anglesea, in July—Schwarz. Atco, rare—Liebeck.

H. rufa, Illig.

Newark; not rare. Determined by myself.

ORTHALTICA, Cr.**O. copalina**, Fabr.

Rather common throughout the State.

CREPIDODERA, Chevr.**O. rufipes**, Linn.

Generally distributed, rare—Liebeck. Hudson county—
Linell.

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C. helexinus, Linn.

Common throughout the State.

C. atriventris, Melsh.

Atco, rare—Liebeck. Hudson county—Linell. Newark—
Loeffler. Ocean county, not rare, in May—Smith.

EPITRIX, Foudr.

E. fuscula, Cr.

Generally distributed, rare—Liebeck.

E. cucumeris, Harr.

Common throughout the State. The cucumber flea beetle.

MANTURA, Steph.

M. floridana, Cr.

Anglesea, in July—Schwarz.

CHÆTOCNEMA, Steph.

C. subcylindrica, Lec.

Westville, rare—Liebeck.

C. denticulata, Illig.

Hudson county—Linell. Generally distributed, not uncommon—Liebeck. Ocean county, not rare—Smith.

C. pulicaria, Mels.

Hudson county—Linell. Anglesea—Wenzel.

C. minuta, Mels.

Newark—Bischoff.

C. pinguis, Lec.

Newark—Bischoff.

SYSTEMA, Clark.

S. hudsonias, Först.

Rather common throughout the State.

S. rontalis, Fabr.

Generally distributed, not rare—Wenzel. Westville, rare—Liebeck. Hudson county—Linell. Orange Mountains, in July, not rare—Smith.

S. tæniata, Say.

Not uncommon throughout the State.

S. marginalis, Illiger.

Generally distributed throughout the State ; not common.

GLYPTINA, Lec.

G. spuria, Lec.

Generally distributed, rare—Liebeck. Hudson county—
Linell.

PHYLLOTRETA, Foudr.

P. sinuata, Steph.

Generally distributed, common—Wenzel. Hudson county—
Linell.

P. vittata, Fabr.

Quite common throughout the State.

P. bipustulata, Fabr.

Generally distributed, not common—Wenzel, Liebeck. Hud-
son county—Linell.

P. chalybeipennis, Cr.

Cape May, in July—Schwarz.

P. picta, Say.

Generally distributed throughout the State ; not common.

LONGITARSUS, Latr.

L. insolens, Horn.

New Jersey—Collection Dr. Horn.

L. melanurus, Mels.

Newark—Loeffler.

DIBOLIA, Latr.

D. borealis, Chevr.

Atco, rare—Liebeck. Hudson county—Linell.

PSYLLIODES, Latr.

P. punctulata, Melsh.

Generally distributed, rare—Liebeck. Anglesea, in July—
Schwarz. Hudson county—Linell.

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P. convexior, Lec.

Generally distributed, rare—Liebeck. Hudson county—Linell.

MICRORHOPALA, Baly.

M. vittata, Fabr.

Not rare along the coast—Wenzel. Anglesea, in July—Schwarz. Hudson county—Linell. Newark.

M. xerene, Newn.

Generally distributed, not common—Wenzel. Westville, rare—Liebeck.

M. porcata, Melsh.

Hudson county—Linell.

ODONTOTA, Chevr.

O. scapularis, Oliv.

Generally distributed, common—Wenzel. Hudson county—Linell. Newark.

O. bicolor, Oliv.

Newark ; apparently not rare. Determined by myself.

O. dorsalis, Thunb.

Generally distributed wherever the Locust (*Robinia pseudacacia*) is found.

O. rubra, Web.

Quite common throughout the State. Ocean county, in May, common on Locust—Smith.

O. nervosa, Panz.

Common throughout the State. Found in Ocean county with the preceding.

CHARISTENA, Baly.

C. nigrita, Oliv.

Newark ; rare. Determined by myself.

STENISPA, Baly.

S. metallica, Fabr.

New Jersey, rare—Liebeck. Collection Dr. Horn. Newark. Ocean county, rare—Smith.

CASSIDA, Linn.

- C. nigripes**, Oliv.
Generally distributed, common—Wenzel.
- C. bivittata**, Say.
Generally distributed, common—Wenzel.

COPTOCYCLA, Chev.

- C. aurichalcea**, Fabr.
Generally distributed throughout the State; locally quite common.
- C. guttata**, Oliv.
Madison. Newark.
- C. clavata**, Fabr.
More rare than *aurichalcea*, but as generally distributed and sometimes locally abundant. Caldwell, common—Crane.

CHELYMORPHA, Chev.

- C. argus**, Licht.
Common throughout the State.
- C. phytophagica**, Cr.
On the Newark list.
-

Family BRUCHIDÆ.**BRUCHUS, Linn.**

- B. pisi**, Linn.
Common; generally distributed. The well-known "pea weevil."
- B. bivulneratus**, Horn.
Hudson county—Linell.
- B. nigrinus**, Horn.
New Jersey—Collection Dr. Horn.
- B. alboscuteollatus**, Horn.
Hudson county—Linell.

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B. calvus, Horn.

Anglesea, in July—Schwarz.

B. obsoletus, Say.

Common throughout the State; infesting beans.

B. musculus, Say.

Brigantine Beach, in September, mainland, on Solidago—
Hamilton. Madison.

The list in this family is very incomplete. We have at least
as many more specimens as are above recorded.

Family TENEBRIONIDÆ.

EPITRAGUS, Lec.

E. arundinis, Lec.

Common along the coast, from Sandy Hook to Cape May.
July (Sandy Hook) to September (Brigantine Beach)—Hamilton.

PHELLOPSIS, Lec.

P. obcordata, Kirby.

On dry fungoid growths on trees. Hudson county—Linell.
Fort Lee—Smith.

NYCTOBATES, Guér.

N. pennsylvanica, De G.

Common all over the State, under bark.

Var. barbata, Knoch.

With the type—Wenzel.

MERINUS, Lec.

M. lævis, Oliv.

Generally distributed, rare—Wenzel. Hudson county—Linell.

UPIS, Fabr.

U. ceramboides, Linn.

On the Newark list.

HAPLANDRUS, Lec.

H. femoratus, Fabr.

Generally distributed throughout the State; not uncommon.

H. ater, Lec.

Generally distributed, rare—Wenzel. I have taken it at New Brunswick.

CENTRONOPUS, Sol.

C. parallelus, Lec.

Generally distributed, common—Wenzel.

SCOTOBATES, Horn.

S. calcaratus, Fabr.

Generally distributed, common—Wenzel. Newark. Caldwell, very rare—Crane. Madison.

XYLOPINUS, Lec.

X. saperdioides, Oliv.

Generally distributed, not common—Wenzel, Liebeck. Newark. Caldwell, common—Crane.

X. rufipes, Say.

Generally distributed, not common—Wenzel, Liebeck. Caldwell, rare—Crane.

X. ænescens, Lec.

New Jersey—Collection Dr. Horn. Caldwell, common—Crane.

TENEBRIO, Linn.

T. obscurus, Fabr.

Common throughout the State.

T. molitor, Linn.

Equally common with the preceding.

T. castaneus, Knoch.

Dacosta, rare—Liebeck.

T. tenebrioides, Beauv.

Generally distributed, common—Wenzel, Liebeck. Caldwell, common—Crane.

OPATRINUS, Latr.

O. notus, Say.

Quite common throughout the State.

O. aciculatus, Lec.

Rare. I have taken a few specimens near Jersey City.

BLAPSTINUS, Lat.

B. mœstus, Melsh.

Brigantine Beach, in September—Hamilton.

B. pulverulentus, Mann.

Gloucester county, not common—Wenzel.

B. interruptus, Say.

Anglesea, in July—Schwarz. Brigantine Beach, in September—Hamilton.

B. metallicus, Fabr.

Gloucester county and sea-shore, not common—Wenzel. Hudson county—Linell. Brigantine Beach, in September—Hamilton. Madison.

EPHALUS, Lec.

E. latimanus, Lec.

Ocean Beach—Paulmier. A single specimen only, now in the College collection. A very rare species, which I have taken sparingly on Long Island.

TRIBOLIUM, MacL.

T. ferrugineum, Fabr.

Newark. Determined by myself. I have taken this commonly.

GNATHOCERUS, Thunb.

G. cornutus, Fabr.

On the Newark list. New Jersey—Collection Dr. Horn. Atlantic City—Castle.

ALPHITOBIOUS, Steph.

A. diaperinus, Panz.

On the Newark list.

ULOMA, Lap.**U. impressa, Melsh.**

Generally distributed, common—Wenzel. Brigantine Beach, in September, mainland—Hamilton. Newark.

U. imberbis, Lec.

Generally distributed, common—Wenzel. Brigantine Beach, in September, mainland—Hamilton.

U. punctulata, Lec.

Generally distributed, less common than the preceding—Wenzel.

EUTOCHIA, Lec.**E. picea, Melsh.**

Generally distributed, rare—Wenzel, Liebeck. Atlantic City—Castle.

ANÆDUS, Blanch.**A. brunneus, Ziegl.**

Generally distributed, rare—Wenzel. I have taken this not infrequently under leaves, almost anywhere in the State.

PARATENETUS, Spin.**P. fuscus, Lec.**

Anglesea, in July—Schwarz.

PHALERIA, Latr.**P. testacea, Say.**

Common all along the sea-coast, from Sandy Hook to Cape May.

DIAPERIS, Geoff.**D. hydni, Fabr.**

Generally distributed throughout the State, and locally common.

HOPLOCEPHALA, Lap.**H. viridipennis, Fabr.**

Generally distributed, common—Wenzel. Hudson county—Linell.

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H. bicornis, Oliv.

On the Newark list. Caldwell, common—Crane.

PLATYDEMA, Lap.

P. excavatum, Say.

Generally distributed, common—Wenzel. Anglesea, in July—Schwarz. Newark. Caldwell, common—Crane.

P. ruficorne, Sturm.

Generally distributed, common—Wenzel. Newark. Brigantine Beach, in September—Hamilton.

P. ellipticum, Fabr.

Locally common, generally distributed—Wenzel.

P. americanum, Lap.

Common, generally distributed—Wenzel.

PHYLETUS, Meg.

P. bifasciatus, Say.

Hudson county—Linell. Newark.

HYPOPHLEUS, Fabr.

H. cavus, Lec.

Generally distributed, rare—Wenzel.

H. parallelus, Melsh.

Newark. Brigantine Beach, in September, mainland—Hamilton. Generally distributed, common—Wenzel. Westville—Castle.

H. thoracicus, Melsh.

Generally distributed, rare—Wenzel.

BOLETOTHERUS, Cand.

B. bifurcus, Fabr.

Common all over the State.

BOLETOPHAGUS, Ill.

B. corticola, Say.

Hudson county—Linell.

B. depressus, Rand.

Hudson county—Linell. Generally distributed, common—Wenzel.

HELOPS, Fabr.**H. micans**, Fabr.

Locally common throughout the State.

H. americanus, Beauv.

Generally distributed, rare—Wenzel.

H. venustus, Say.

Generally distributed, rare—Wenzel. Atlantic City—Castle.

H. gracilis, Bland.

Atlantic and Cape May counties, rare—Wenzel. Atlantic City and Central New Jersey—Castle.

H. æreus, Germ.

Common throughout the State; more rare than *micans*.

MERACANTHA, Kirby.**M. contracta**, Beauv.

Generally distributed, rare—Wenzel, Liebeck.

STRONGYLUM, Kirby.**S. tenuicolle**, Say.

Hudson county—Linell. Madison.

Family CISTELIDÆ.
ALLECULA, Fabr.**A. punctulata**, Melsh.

Generally distributed, rare—Wenzel. Anglesea, in July—Schwarz.

HYMENORUS, Muls.**H. obscurus**, Say.

Generally distributed, common—Wenzel.

H. rufipes, Lec.

Caldwell, rare—Crane.

CISTELA, Fabr.

C. brevis, Say.

Generally distributed, rare—Wenzel.

C. sericea, Say.

Newark ; common.

ISOMIRA, Muls.

I. quadristriata, Coup.

Generally distributed, common—Wenzel.

MYCETOOHARES, Lec.

M. fraterna, Say.

New Jersey—Collection Dr. Horn.

ANDROCHIRUS, Lec.

A. erythropus, Kirby.

Generally distributed, not common—Wenzel.

CAPNOCHROA, Lec.

C. fuliginosa, Melsh.

On the Newark list. Caldwell, rare—Crane.

Family LAGRIIDÆ.

ARTHROMACRA, Kirby.

A. ænea, Say.

Atlantic and Cape May counties, rare—Wenzel. Newark.

STATIRA, Latr.

S. resplendens, Melsh.

Generally distributed, not common—Wenzel.

S. gagatina, Melsh.

Generally distributed, common—Wenzel. Newark ; rare.

Family MELANDRYIDÆ.**TETRATOMA, Fabr.****T. truncorum, Lec.**

Westville, rare—Liebeck.

PENTHE, Newn.**P. obliquata, Fabr.**Generally distributed, common—Liebeck, Wenzel. Newark.
Madison. Caldwell, rare—Crane.**P. pimelia, Fabr.**I have taken this not rarely, with the preceding, along the
Palisades.**SYNCHROA, Newn.****S. punctata, Newn.**

Generally distributed, common—Wenzel.

MELANDRYA, Fabr.**M. striata, Say.**

On the Newark list.

EMMESA, Newn.**E. labiata, Say.**

I have taken this rarely near Fort Lee.

ENCHODES, Lec.**E. sericea, Hald.**

Recorded on the Newark list.

HYPULUS, Payk.**H. simulator, Newn.**

Newark. Determined by myself.

DIRCÆA, Fabr.**D. liturata, Lec.**Newark. Determined by myself. Anglesea, in July—
Schwarz. Caldwell, rare—Crane.

SYMPHORA, Lec.

S. rugosa, Hald.

Anglesea, in July—Schwarz. Newark—Loeffler.

ANISOXYA, Muls.

A. glaucula, Lec.

Anglesea, in July—Schwarz. Newark—Loeffler.

EUSTROPHUS, Ill.

E. confinis, Lec.

Generally distributed, rare—Wenzel.

E. bicolor, Say.

Taken by me near Hoboken.

E. bifasciatus, Say.

Generally distributed, rare—Wenzel.

E. tomentosus, Say.

I have taken this near Hoboken.

HALLOMENUS, Panz.

H. scapularis, Mels.

Newark—Loeffler.

ORCHESIA, Latr.

O. castanea, Melsh.

Anglesea, in July—Schwarz. Newark.

SCRAPTIA, Latr.

S. sericea, Melsh.

Newark—Loeffler.

CANIFA, Lec.

C. pallipes, Mels.

Newark—Loeffler.

MYCTERUS, Clairv.

M. scaber, Hald.

Not rare in the vicinity of Jersey City and Hoboken.

There will be considerable additions in this family when the State is more thoroughly collected over.

Family PYTHIDÆ.

PYTHO, Latr.

P. americanus, Kirby.

I have taken this rarely along the Palisades.

Family ŒDEMERIDÆ.

MICROTONUS, Lec.

M. sericans, Lec.

Anglesea, in July—Schwarz. Newark—Loeffler.

NACERDES, Schm.

N. melanura, Linn.

Common near Newark and Jersey City. Madison.

XANTHOCHROA, Schm.

X. lateralis, Melsh.

Recorded on the Newark list.

OXACIS, Lec.

O. notoxoides, Fabr.

Newark. Determined by myself.

O. dorsalis, Melsh.

Common along the shore, from Sandy Hook to Cape May.

ASOLERA, Schm.

A. ruficollis, Say.

Newark. Determined by myself.

Family CEPHALOIDÆ.

CEPHALOON, Newn.

C. lepturoides, Newn.

Newark. Determined by myself.

Family MORDELLIDÆ.

PENTARIA, Muls.

P. trifasciata, Melsh.

Generally distributed, not common—Wenzel.

ANASPIS, Geoffr.

A. rufa, Say.

Common in the Orange Mountains.

TOMOXIA, Costa.

T. bidentata, Say.

Newark. On dead trees; not common. Caldwell, rare—Crane.

MORDELLA, Linn.

M. melæna, Germ.

Orange Mountains, not rare—Smith. Caldwell, common—Crane.

M. scutellaris, Fabr.

Camden and Gloucester counties, not common—Wenzel.
Orange Mountains, common—Smith. Caldwell, common—Crane.

M. octopunctata, Fabr.

Camden and Gloucester counties, rare—Wenzel.

M. marginata, Melsh.

Generally distributed, not common—Wenzel. Orange Mountains, common—Smith.

M. triloba, Say.

Newark. Determined by myself.

M. discoidea, Melsh.

Rare in the Orange Mountains. Caldwell, rare—Crane.

MORDELLISTENA, Costa.

M. trifasciata, Say.

Newark. Determined by myself.

M. lepidula, Lec.

Orange Mountains, rare—Smith.

- M. limbalis**, Melsh.
Orange Mountains, rare—Smith.
- M. vapida**, Lec.
Orange Mountains, rare—Smith.
- M. fulvicollis**, Melsh.
Orange Mountains, only a single specimen—Smith.
- M. scapularis**, Say.
Orange Mountains, rare—Smith.
- M. comata**, Lec.
Generally distributed, not common—Wenzel. Orange Mountains, common—Smith.
- M. aspersa**, Melsh.
Orange Mountains, the most common species—Smith.
- M. ancilla**, Lec.
Generally distributed, not common—Wenzel.
- M. varians**, Lec.
Orange Mountains, common—Smith. Brigantine Beach, in September—Hamilton.
- M. nigricans**, Melsh.
Generally distributed, not common—Wenzel. Orange Mountains, not uncommon—Smith.
- M. ruficeps**, Lec.
New Jersey, exact locality unknown—Smith.
- M. splendens**, Smith.
Mr. Wenzel has taken a specimen in New Jersey.
- M. pustulata**, Mels.
Orange Mountains, not rare—Smith.
- M. fuscipennis**, Mels.
New Jersey, near Hoboken—Smith.
- M. ambusta**, Lec.
New Jersey, rare—Smith.
- M. unicolor**, Lec.
Generally distributed, rare—Wenzel. Orange Mountains—Smith.

M. marginalis, Say.

Orange Mountains, not rare—Smith.

M. pubescens, Fabr.

Orange Mountains, rather common—Smith.

M. bihamata, Melsh.

Newark. Determined by myself.

M. liturata, Melsh.

Anglesea, in July—Schwarz.

M. fuscata, Mels.

Orange Mountains, rare—Smith.

Most of my collections in this family were made in the hills back of Montclair, and on the first ridge, and almost always in July.

Family ANTHICIDÆ.

CORPHYRA, Say.

C. funebris, Horn.

Along the coast, not rare—Wenzel.

C. collaris, Say.

Along the coast, not rare—Wenzel. Caldwell, rare—Crane.

C. elegans, Hentz.

Caldwell, rare—Crane.

MACRATRIA, Newn.

M. murina, Newn.

I have taken this commonly in Ocean county. Newark—Loeffler.

NOTOXUS, Geoffr.

N. bicolor, Say.

Generally distributed, rather common—Wenzel, Liebeck.

N. bifasciatus, Lec.

Atco, rather common—Wenzel, Liebeck. Clifton, locally common—Smith. Newark.

N. planicornis, Laf.

Anglesea, in July—Schwarz.

N. monodon, Fabr.

Common throughout the State.

Var. delicatus, Casey.

Brigantine Beach, in September—Hamilton.

N. anchora, Hentz.

Ocean county, not common—Smith.

MECYNOTARSUS, Laf.

M. candidus, Lec.

Westville, not rare—Liebeck.

ANTHICUS, Payk.

A. formicarius, Laf.

Sea-shore, common—Wenzel. Anglesea, in July—Schwarz.

Brigantine Beach, in September, abundant—Hamilton.

A. cinotus, Say.

Anglesea, in July—Schwarz.

A. rejectus, Lec.

Brigantine Beach, in September, frequent—Hamilton.

A. floralis, Linn.

Sea-shore, common—Wenzel. Newark—Loeffler.

A. cribratus, Lec.

Recorded on the Newark list.

A. difficilis, Lec.

Anglesea, in July—Schwarz.

A. confusus, Lec.

Anglesea—Wenzel.

A. cervinus, Laf.

Sea-shore, not rare—Wenzel. New Jersey—Collection Dr. Horn.

A. spretus, Lec.

Anglesea, in July—Schwarz.

A. fulvipes, Laf.

Newark—Loeffler.

A. pallens, Lec.

Sea-shore, not rare—Wenzel. Anglesea, in July—Schwarz.
Brigantine Beach, in September, rare—Hamilton.

Family PYROCHROIDÆ.

PYROCHROA, Geoff.

P. fiabellata, Fabr.

New Jersey—Collection Dr. Horn. Caldwell, common—
Crane.

P. femoralis, Lec.

Generally distributed, rare—Wenzel.

DENDROIDES, Latr.

D. canadensis, Latr.

Recorded on the Newark list. Caldwell, rare—Crane.

Family MELOIDÆ.

MELOE, Linn.

M. angusticollis, Say.

On the Newark list. Caldwell, rare—Crane. Madison.

M. americanus, Leach.

Recorded on the Newark list.

MACROBASIS, Lec.

M. unicolor, Kirby.

Generally distributed; sometimes common. Madison. Caldwell.

EPICAUTA, Redt.**E. trichrus**, Pall.

Westville, rare—Liebeck.

E. vittata, Fabr.

On the Newark list. Madison. Caldwell, common—Crane.

E. cinerea, Först.

Not uncommon throughout the State.

E. pennsylvanica, De G.Common in fall, on *Solidago*, almost everywhere. Brigantine Beach, in September—Hamilton.**POMPHOPCEA, Lec.****P. ænea**, Say.

Westville, rare—Liebeck.

Family RHIPIPHORIDÆ.**RHIPIPHORUS, Fabr.****R. flavipennis**, Lec.

Generally distributed, rare—Wenzel.

R. dimidiatus, Fabr.

Hudson county—Linell.

R. pectinatus, Fabr.

Generally distributed, rare—Wenzel. Newark. Caldwell, rare—Crane.

R. limbatus, Fabr.

Generally distributed, rare—Wenzel. Newark.

Family STYLOPIDÆ.**XENOS, Rossi.****X. peckii**, Kirby.I have frequently caught the infested *Polistes*, but have not taken or bred the imago.

Family RHINOMACERIDÆ.

RHINOMACER, Fabr.

R. pilosus, Lec.

Gloucester, rare—Wenzel.

R. elongatus, Lec.

Gloucester, rare—Wenzel. Westville, rather common—Liebeck. Morristown, on dry pine branches—Julich.

Family RHYNCHITIDÆ.

AULETES, Sch.

A. ater, Lec.

Landisville; Dacosta, rare—Liebeck. Fort Lee, on Sweet Fern—Julich. Anglesea—Wenzel.

EUGNAMPTUS, Sch.

E. angustatus, Hbst.

Generally distributed, rather common—Liebeck. On Hickory—Wenzel. Newark. Madison.

E. collaris, Fabr.

On the Newark list. New Jersey—Julich.

RHYNCHITES, Hbst.

R. bicolor, Fabr.

Common throughout the State, on Rose.

R. hirtus, Fabr.

Atlantic and Cape May counties, rare—Wenzel. Dacosta, rare—Liebeck. Newark. Bergen—Julich.

R. fossifrons, Lec.

Atco, very rare—Wenzel.

R. æratus, Say.

Landisville, not uncommon—Liebeck. Bloomfield—Julich. Anglesea—Wenzel.

PTEROCOLUS, Sch.**P. ovatus, Fabr.**

Generally distributed, rather common—Liebeck. Camden,
Atco, on Scrub Oak, rather common—Wenzel. Newark.
Orange, Fort Lee, on Oak—Julich.

Family ATTELABIDÆ.**ATTELABUS, Linn.****A. analis, Ill.**

Generally distributed, rather common—Liebeck. Newark.
On Sumac—Julich. Caldwell, common—Crane.

A. nigripes, Lec.

Atlantic and Cape May counties, on Scrub Oak, not rare—
Wenzel.

A. bipustulatus, Fabr.

Same as before—Wenzel. Generally distributed, not rare—
Liebeck. Ocean county, common—Smith.

A. rhois, Boh.

Newark. Ocean county, on *Rhus*, not rare—Smith. Orange,
on Hazel—Julich.

Family OTIORHYNCHIDÆ.**EPICÆRUS, Sch.****E. imbricatus, Say.**

Camden, rare—Liebeck. Generally distributed—Wenzel.

HORMORUS, Horn.**H. undulatus, Uhler.**

On the Newark list. West Hoboken—Julich.

ANAMETIS, Horn.**A. grisea, Horn.**

On the Newark list.

PANSCOPIUS, Sch.

P. erinaceus, Say.

On the Newark list. Under stones—Julich.

PHYXELIS, Sch.

P. rigidus, Say.

Generally distributed, rare—Wenzel. Camden, rare—Liebeck.
Newark, under stones—Julich. Madison.

AGRAPHUS, Say.

A. bellicus, Say.

On the Newark list. Shrewsbury, on *Solidago*—Julich.

OTIORHYNCHUS, Germ.

O. sulcatus, Fabr.

On the Newark list. New Jersey—Julich.

O. ovatus, Linn.

Generally distributed, rare—Liebeck. Newark. New Jersey
—Julich.

CERCOPEUS, Sch.

C. chrysorrhæus, Say.

Orange—Julich.

TANYMECUS, Sch.

T. confertus, Gyll.

Generally distributed, rather common—Wenzel, Liebeck.
Newark. Hudson county—Linell.

PANDELETEJUS, Sch.

P. hilaris, Hbst.

Generally distributed, common—Liebeck, Julich. Newark.

BRACHYSTYLUS, Sch.

B. acutus, Say.

On the Newark list.

ARAMIGUS, Horn.**A. fulleri**, Horn.New Jersey—Collection Dr. Horn. West Hoboken—Julich.
Madison.**APERASTUS, Gyll.****A. tæniatus**, Gyll.

Rather common throughout the State.

CYPHOMIMUS, Horn.**C. dorsalis**, Horn.Hudson county—Linell. Fort Lee, on *Prunus virginica*—
Julich.

Family CURCULIONIDÆ.**SITONES, Sch.****S. hispidulus**, Germ.Anglesea, in July—Schwarz. Generally distributed, rare—
Wenzel. Hudson county—Linell. New Brunswick, rather
common—Smith. This is a clover-root pest.**S. flavescens**, Marsh.Generally distributed, rare—Wenzel. Hudson county—Linell.
New Jersey—Julich.**S. crinitus**, Oliv.

New Jersey—Julich.

ITHYCERUS, Sch.**I. noveboracensis**, Först.Generally distributed, rare—Wenzel, Liebeck. Hudson county
—Linell. Newark. New Jersey—Julich.**APION, Hbst.****A. decoloratum**, Smith.

Camden and Gloucester counties—Wenzel.

A. herculaneum, Smith.On the Newark list. On *Cratægus*—Julich.

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A. segnipes, Say.

Gloucester county, common—Wenzel.

A. griseum, Smith.

Gloucester county—Wenzel.

A. rostrum, Say.

Sweet Fern—Julich.

A. nigrum, Hbst.

August 26th—Chittenden.

Many more species of this genus will be added to the list when full collections are made.

PHYTONOMUS, Sch.

P. punctatus, Fabr.

Camden, common—Wenzel, Liebeck. Brigantine Beach, in September, one dead specimen—Hamilton. Anglesea, in July—Schwarz. Newark. This species has invaded New Jersey the present year (1889), and has become extremely abundant in the vicinity of Philadelphia and Camden. I received it early in the season from the northwestern part of the State. Beaten from trees at Fort Lee—Julich. Newark, common—Bischoff.

P. comptus, Say.

Westville, rare—Liebeck. Gloucester, rare—Wenzel. Hudson county—Linell. New Jersey—Julich.

P. nigrirostris, Fabr.

Hudson county—Linell. Newark. This is a common species on the Long Island coast in early summer. Communipaw—Julich.

LISTRONOTUS, Jek.

L. tuberosus, Lec.

Gloucester county, rare—Wenzel.

L. squamiger, Say.

Gloucester, rare—Wenzel.

L. callosus, Lec.

Hudson county—Linell.

L. inæqualipennis, Boh.

Hudson county—Linell. Newark—Bischoff.

L. appendiculatus, Boh.

Camden county. Atco, common on Pickerel Weed—Wenzel.
In reeds, New Jersey—Julich. Newark, in reeds—Bischoff.

L. latiusculus, Boh.

Gloucester and Camden counties, rare—Wenzel. Hudson county—Linell.

L. teretirostris, Lec.

New Jersey, in reeds—Julich.

STROPHISOMA, Billb.**S. coryli**, Fabr.

Orange Mountains, on *Betula lenta*—Julich.

MACROPS, Kirby.**M. sparsus**, Say.

New Jersey—Julich. Newark—Bischoff.

M. humilis, Gyll.

Brigantine Beach, in September, three specimens—Hamilton.
New Jersey—Julich. Ocean county, not common—Smith.

M. solutus, Boh.

Generally distributed, rare—Liebeck. Camden and Gloucester counties, not rare—Wenzel. New Jersey—Julich. Newark—Bischoff.

PISSODES, Germ.**P. strobi**, Peck.

Generally distributed throughout the State; injurious to Pine and Spruce.

PACHYLOBIUS, Lec.**P. picivorus**, Germ.

Generally distributed, common—Wenzel. Rare—Liebeck.
Brigantine Beach, in September, four specimens washed up—Hamilton.

HYLOBIUS, Germ.**H. pales**, Hbst.

Generally distributed throughout the State and common.

EUDOCIMUS, Sch.

E. mannerheimii, Boh.

In cedar swamps—Julich.

LIXUS, Fabr.

L. sylvius, Boh.

Fort Lee—Linell, Julich.

L. terminalis, Lec.

Generally distributed, rather common—Wenzel. Westville,
rather common—Liebeck. Hudson county—Linell.

L. rectus, Lec.

Arlington—Julich.

L. concavus, Say.

More or less common throughout the State.

L. musculus, Say.

Westville, rare—Liebeck. Camden and Gloucester counties,
rare—Wenzel. Hudson county—Linell. Newark. New Jer-
sey—Julich.

DORYTOMUS, Steph.

D. mucidus, Say.

New Jersey—Julich.

D. laticollis, Lec.

Guttenburg, on Poplar—Julich.

D. brevicollis, Lec.

Hudson county—Linell.

ERYCUS, Tourn.

E. puncticollis, Lec.

Hudson county—Linell. West Hoboken—Julich. Newark
—Bischoff.

BARYTYCHIUS, Jek.

B. amœnus, Say.

On the Newark list.

SMICRONYX, Sch.

S. griseus, Lec.

Hudson county—Linell. Newark—Bischoff.

S. squammulatus, Lec.
Anglesea—Wenzel.

PHYLLOTROX, Sch.
P. ferrugineus, Lec.
Anglesea, in July—Schwarz.

ENDALUS, Lap.
E. limatulus, Gyll.
Hoboken, salt meadows—Julich.

TANYSPHYRUS, Sch.
T. lemnæ, Fabr.
Westville, rather common—Liebeck. Hudson county—Linell.
Hoboken, salt meadows—Julich.

ANCHODEMUS, Lec.
A. angustus, Lec.
Hoboken, salt meadows—Julich.

LISSORHOPTRUS, Lec.
L. apiculatus, Gyll.
Generally distributed, rare—Liebeck. Camden and Gloucester counties, common—Wenzel.
L. simplex, Say.
Hudson county—Linell. Hoboken, salt meadows—Julich.

BAGOUS, Germ.
B. obliquus, Lec.
Hudson county—Linell. New Jersey—Julich.
B. magister, Lec.
Hudson county—Linell.

OTIDOCEPHALUS, Chevr.
O. myrmex, Hbst.
Generally distributed, rather common—Wenzel, Liebeck.
Hudson county—Linell. New Jersey—Julich.

O. scrobicollis, Boh.

Generally distributed, rare—Wenzel. Hudson county—Linell.

O. chevrolatii, Horn.

Generally distributed, rare—Wenzel. Hudson county—Linell, Julich.

O. lævicollis, Horn.

Hudson county—Linell, Julich.

MAGDALIS, Germ.

M. perforata, Horn.

Generally distributed, rare—Wenzel.

M. lecontei, Horn.

Generally distributed, rare—Wenzel. Rather common—Liebeck.

M. barbita, Say.

Generally distributed, rare—Wenzel. Newark. New Jersey—Julich. Caldwell, rare—Crane.

M. ænescens, Lec.

Anglesea—Wenzel.

M. olyra, Hbst.

Generally distributed, rare—Wenzel. Hudson county—Linell. Atlantic City. Anglesea.

M. pandura, Say.

Sea-shore counties, rare—Wenzel. Westville, rare—Liebeck. New Jersey—Julich.

M. armicollis, Say.

Generally distributed, rare—Wenzel. Newark. New Jersey—Julich. Atlantic City—Castle.

M. pallida, Say.

As before—Wenzel. Newark. New Jersey—Julich. Atlantic City—Castle.

ANTHONOMUS, Germ.

A. quadrigibbus, Say.

Camden and Gloucester counties, on Wild Cherry—Wenzel. Dacosta, rather common—Liebeck. Newark. New Jersey—Julich.

- A. profundus**, Lec.
Westville, rare—Liebeck.
- A. scutellatus**, Gyll.
Dacosta, rare—Liebeck. New Jersey—Julich.
- A. signatus**, Say.
Generally distributed, rare—Wenzel. Westville, rather common—Liebeck. Hudson county—Linell, Julich. Anglesea.
- A. helvolus**, Boh.
Hudson county—Linell. New Jersey—Julich.
- A. sycophanta**, Walsh.
On the Newark list. New Jersey—Julich.
- A. suturalis**, Lec.
Generally distributed, rare—Wenzel. Newark. New Jersey—Julich.
- A. musculus**, Say.
Generally distributed, rare—Wenzel. Newark.
- A. corvulus**, Lec.
New Jersey—Julich.
- A. disjuncta**, Lec.
Gloucester county, rare—Wenzel. New Jersey—Collection Dr. Horn. Atlantic City—Castle.
- A. unguularis**, Lec.
New Jersey—Julich.
- A. mixtus**, Lec.
Generally distributed, rare—Wenzel.

ORCHESTES, III.

- O. pallicornis**, Say.
Newark. Determined by myself.
- O. niger**, Horn.
New Jersey—Julich.
- O. ephippiatus**, Say.
New Jersey—Julich.

ELLESOCHUS, Steph.

E. bipunctatus, Linn.
New Jersey—Julich.

E. ephippiatus, Say.
New Jersey—Julich. Newark—Bischoff.

PRIONOMERUS, Sch.

P. calceatus, Say.
Sea-shore, rare—Liebeck. Newark.

PIAZORHINUS, Sch.

P. scutellaris, Say.
Generally distributed, rare—Liebeck. Hudson county—
Linell, Julich.

P. pictus, Lec.
Shrewsbury, collected by Soltau—Julich.

THYSANOONEMIS, Lec.

T. fraxini, Lec.
Westville, rare—Liebeck. Gloucester, in a hard fungus, rare
—Wenzel. Atlantic City—Castle.

PLOCETES, Lec.

P. ulmi, Lec.
Westville, rare—Liebeck. Gloucester, a single specimen only
—Wenzel. Hudson county—Linell. Atlantic City—Castle.

TYOHIUS, Sch.

T. sordidus, Lec.
Anglesea—Wenzel.

GYMNETRON, Sch.

G. teter, Fabr.
Rather common throughout the State, on Mullen.

MIARUS, Steph.

M. hispidulus, Lec.
On the Newark list. New Jersey—Julich.

LÆMOSACCUS, Sch.**L. plagiatus, Sch.**

Generally distributed, rather common—Liebeck. Not common, on Oak—Wenzel. Hudson county—Linell. Newark. On Oak—Julich.

CONOTRACHELUS, Sch.**C. juglandis, Lec.**

Generally distributed, rare—Wenzel. Hudson county—Linell. Newark. New Jersey—Julich.

C. nenuphar, Hbst.

The plum curculio; common throughout the State.

C. elegans, Say.

Generally distributed, common—Wenzel. Hudson county—Linell. Newark. New Jersey—Julich.

C. aratus, Germ.

Atlantic county, rare—Wenzel.

C. crataegi, Walsh.

Atlantic county, rare—Wenzel. New Jersey—Julich. Caldwell, common—Crane.

C. naso, Lec.

Atlantic county, rare—Wenzel.

C. posticatus, Boh.

Atlantic county, rare—Wenzel. Hudson county—Linell. Newark. New Jersey—Julich.

C. geminatus, Lec.

Atlantic county, rare—Wenzel. Westville, rare—Liebeck. Hudson county—Linell. New Jersey—Julich.

C. anaglypticus, Say.

Rather common throughout the State.

C. fissunguis, Lec.

Sea-shore, rather common—Liebeck. Cape May county, on Wild Hollyhock—Wenzel.

RHYSSEMATUS, Chevr.

R. lineaticollis, Say.

I used to find this not rarely along the Palisades. On *Asclepias*
—Julich. Caldwell, rare—Crane.

CHALCODERMA, Sch.

C. collaris, Horn.

Atlantic City—Castle.

ACALLES, Sch.

A. spec. indet.

Newark, in ants' nests—Bischoff. This most resembles the
southern *clavatus*, but seems to differ from all the species in Dr.
Horn's collection.

TYLODERMA, Say.

T. foveolatum, Say.

Generally distributed, rare—Wenzel. Westville, rare—Lie-
beck. New Jersey—Julich. Newark—Bischoff.

T. fragariæ, Riley.

Arlington, Maplewood, under stones—Julich.

T. ærum, Say.

Westville, rare—Liebeck. New Jersey—Julich. Newark—
Bischoff.

PHYRDENUS, Lec.

P. undatus, Lec.

In cedar swamps—Julich.

CRYPTORHYNCHUS, Ill.

C. parochus, Hbst.

On the Newark list. On Butternut—Julich.

C. bisignatus, Say.

Generally distributed, rare—Wenzel. Landisville, rare—
Liebeck. New Jersey—Julich.

C. fuscatus, Lec.

Newark. Determined by myself. In cedar swamps—Julich.

- C. pumilus**, Boh.
New Jersey, in cedar swamps—Julich.
- C. obliquus**, Say.
Hudson county—Linell. Generally distributed, rare—Wenzel.
New Jersey, in cedar swamps—Julich.
- C. fallax**, Lec.
Camden, rare—Wenzel. New Jersey—Julich.
- C. minutissimus**, Lec.
Hudson county—Linell. New Jersey—Julich.
- C. tristis**, Lec.
Newark—Bischoff.
- C. ferratus**, Say.
Gloucester, rare—Wenzel. Sea-shore, rare—Liebeck. Hudson county—Linell. New Jersey—Julich. Newark—Bischoff.
- C. lapathi**, Linn.
Newark. Determined by myself. Bergen—Julich.

BAROPSIS, Lec.

- B. cribratus**, Lec.
New Jersey—Collection Dr. Horn.

PIAZURUS, Sch.

- P. oculatus**, Say.
Westville, rare—Liebeck. New Jersey—Julich. Newark—Bischoff.

COPTURUS, Sch.

- C. operculatus**, Say.
New Jersey—Julich.
- C. quercus**, Say.
Hudson county—Linell.
- C. longulus**, Lec.
Atco, one specimen—Wenzel.
- C. binotatus**, Lec.
Hudson county—Linell. Snake Hill, Fort Lee—Julich.
- C. minutus**, Lec.
Anglesea, rare—Wenzel. Anglesea, in July—Schwarz.

ACOPTUS, Lec.

A. suturalis, Lec.

Hudson county—Linell. Newark. Orange—Julich.

TACHYGONUS, Sch.

T. lecontei, Gyll.

Atco, Red Bank, on Pine, rare—Wenzel. • Caldwell—Crane.

T. centralis, Lec.

Landisville, rather common—Liebeck.

T. tardipes, Lec.

Atlantic City—Castle.

MONONYCHUS, Germ.

M. vulpeculus, Fabr.

Generally distributed, rather common, on Blue Flag—Wenzel. Hudson county—Linell. Newark. New Jersey—Julich.

ORAPONIUS, Lec.

O. inæqualis, Say.

West Hoboken—Julich.

OELIODES, Sch.

O. curtus, Say.

Anglesea, not uncommon—Liebeck. Newark.

O. cruralis, Lec.

Hudson county—Linell. • New Jersey—Julich.

O. nebulosus, Lec.

New Jersey—Julich.

O. flavicaudis, Boh.

Shrewsbury, on White Nettle—Julich.

O. acephalus, Say.

Common on the coast—Wenzel. Hudson county—Linell. Shrewsbury—Julich.

ACALLODES, Lec.**A. ventricosus, Lec.**

On the Newark list. Newark—Julich. Ocean county—Smith.

CEUTORHYNCHUS, Germ.**C. rapæ, Gyll.**

West Hoboken—Julich.

C. sulcipennis, Lec.

Weehawken—Julich.

C. semirufus, Lec.

New Jersey—Julich.

C. septentrionalis, Gyll.

New Jersey—Julich.

PELONOMUS, Thom.**P. sulcicollis, Fabr.**

Generally distributed, common—Liebeck. Camden and Gloucester counties, common—Wenzel.

OCELOGASTER, Sch.**O. zimmermanni, Gyll.**

On the Newark list. South Orange, on Beggar's Nits—Julich.

O. cretura, Hbst.

New Jersey—Julich. Caldwell, rare—Crane.

RHINONOUS, Sch.**R. pyrrhopus, Lec.**

Generally distributed, rather common—Liebeck. Camden and Gloucester counties, not rare—Wenzel. Anglesea, in July—Schwarz. New Jersey—Julich.

R. longulus, Lec.

New Jersey—Julich.

RHOPTOBARIS, Lec.**R. nova species, Horn dixit.**

Anglesea—Wenzel.

BARIS, Germ.

B. umbilicata, Lec.

Atco, rare—Wenzel. Hudson county—Linell. Ocean county—Smith.

B. subænea, Lec.

Generally distributed, not rare—Wenzel.

B. confinis, Lec.

Ocean county—Smith.

B. ærea, Boh.

Atlantic City—Castle.

B. interstitialis, Say.

On Yarrow—Julich.

PSEUDOBARIS, Lec.

P. nigrina, Say.

Generally distributed, common—Wenzel. On *Solidago*—Julich.

ONYCHOBARIS, Lec.

O. rugicollis, Lec.

Atco, rare—Wenzel. On *Asclepias*—Julich.

MADARUS, Sch.

M. undulatus, Say.

Generally distributed, not common—Wenzel. Westville, rather common—Liebeck. Hudson county—Linell. New Jersey—Julich.

STETHOBARIS, Lec.

S. tubulatus, Say.

New Jersey—Julich.

CENTRINUS, Sch.

C. scutellum-album, Say.

Common throughout the State.

C. penicellus, Hbst.

Anglesea—Wenzel.

C. picumnus, Hbst.

Found throughout the State; sometimes excessively abundant.

C. lineicollis, Lec.

New Jersey—Julich.

C. rectirostris, Lec.

South Orange—Julich.

C. confinis, Lec.

New Jersey—Julich.

ZYGOBARIS, Lec.

Z. quadricolle, Lec.

West Hoboken, one specimen only—Julich.

BALANINUS, Germ.

B. uniformis, Lec.

Newark. Determined by myself. New Jersey—Julich.

B. nasicus, Say.

Generally distributed, rare—Wenzel, Liebeck. Newark.
Anglesea, in July—Schwarz. New Jersey—Julich.

B. caryæ, Horn.

New Jersey—Julich.

B. rectus, Say.

Generally distributed, rare—Wenzel, Liebeck. Newark.
New Jersey—Julich. Caldwell, common—Crane.

B. quercus, Horn.

Brigantine Beach, mainland, in September—Hamilton. New Jersey—Julich.

B. caryatrypes, Boh.

New Jersey—Julich.

Family BRENTHIDÆ.

EUPSALIS, Lec.

E. minuta, Dru.

Generally distributed, rare—Liebeck. New Jersey—Julich.

Family CALANDRIDÆ.

RHODOBÆNUS, Lec.

R. tredecimpunctata, Ill.

Generally distributed, not uncommon—Wenzel, Liebeck.
Newark. Caldwell, common—Crane. Madison.

SPHENOPHORUS, Sch.

S. simplex, Lec.

New Jersey—Collection Dr. Horn; also Julich.

S. inæqualis, Say.

Rare on the shore—Wenzel. New Jersey—Collection Dr.
Horn.

S. ochreus, Lec.

Generally distributed, rare—Linell. New Jersey—Julich.
Orange Mountains—Hess.

S. pertinax, Lec.

Anglesea, in July—Schwarz. Sea-shore, common—Wenzel,
Liebeck. Brigantine Beach, in September—Hamilton. New-
ark. Breeds in reed,—*Calmus*—Julich.

S. costipennis, Horn.

Sea-shore, rare—Wenzel. Brigantine Beach, in September—
Hamilton. New Jersey—Julich. Caldwell, rare—Crane.

S. cariosus, Oliv.

Brigantine Beach, in September—Hamilton. New Jersey—
Julich.

S. sculptilis, Uhler.

Sea-shore, common—Wenzel, Liebeck. New Jersey—Julich.
Caldwell, rare—Crane.

S. melanocephalus, Fabr.

Sea-shore, rare—Liebeck. Hudson county—Linell. New
Jersey—Julich.

S. sayi, Gyll.

Anglesea, in July—Schwarz.

S. placidus, Say.

Sea-shore, rare—Wenzel. Rather common—Liebeck. Brigantine Beach, in September, abundant—Hamilton. Hudson county—Linell. New Jersey—Julich. Newark—Bischoff.

S. parvulus, Gyll.

Generally distributed, rare—Liebeck. Sea-shore, common—Wenzel. New Jersey—Julich.

S. retusus, Gyll.

Sea-shore, not common—Wenzel. Brigantine Beach, in September, abundant—Hamilton.

CALANDRA, Clairv.**C. oryzæ**, Linn.

Generally distributed, common—Wenzel. Newark.

C. remotepunctata, Gyll.

Generally distributed, rather common—Liebeck. New Jersey—Julich.

C. granaria, Linn.

New Jersey—Julich.

DRYOPHTHORUS, Sch.**D. corticalis**, Say.

Generally distributed, rare—Wenzel, Liebeck. New Jersey—Julich.

COSSONUS, Clairv.**C. platalea**, Say.

Generally distributed, not common—Wenzel. New Jersey—Julich.

C. concinnus, Boh.

New Jersey—Julich.

C. corticola, Say.

As before—Wenzel. Newark. New Jersey—Julich. Anglesea.

C. impressifrons, Boh.

Brigantine Beach, mainland and island, frequent—Hamilton.

MESITES, Sch.

M. subcylindricus, Horn.

Anglesea, rare—Wenzel. Cape May, in July—Schwarz.

PHLÆOPHAGUS, Sch.

P. minor, Horn.

Anglesea, in July—Schwarz. New Jersey—Julich.

WOLLASTONIA, Horn.

W. quercicola, Boh.

Landisville, rare—Liebeck. Sea-shore, rare—Wenzel. New Jersey—Julich.

REYNCHOLUS, Germ.

R. brunneus, Mann.

New Jersey—Julich.

R. oregonensis, Horn.

Anglesea—Wenzel.

STENOSCELIS, Woll.

S. brevis, Boh.

Hudson county—Linell. New Jersey—Julich. Ocean county—Smith.

Family SCOLYTIDÆ.

MONARTHURUM, Kirsch.

M. fasciatum, Say.

Gloucester, rare—Wenzel. New Jersey—Julich.

M. mali, Fitch.

Dacosta, rare—Wenzel. New Jersey—Julich.

PITYOPHTHORUS, Eich.

P. minutissimus, Zimm.

New Brunswick, common in oak twigs—Smith. New Jersey—Julich.

P. pullus, Zimm.

Atco, rare—Wenzel. New Jersey—Julich.

P. pulicarius, Zimm.

Cape May Court House, in July—Schwarz.

P. puberulus, Lec.

Cape May Court House, in July—Schwarz.

HYPOTHENEMUS, Westw.

H. eruditus, Westw.

Bred from Grape and Oak, New Brunswick. Anglesea, in July—Schwarz. New Jersey—Julich.

H. hispidulus, Lec.

Bred from Hickory and Oak. This is *not* the same as *eruditus*.

H. dissimilis, Zimm.

Bred from Grape and Oak. I consider this = *eruditus*. Anglesea.

H. erectus, Lec.

Bred from Hickory and Oak, New Brunswick.

XYLOTERUS, Er.

X. politus, Say.

New Jersey—Julich.

XYLEBORUS, Eich.

X. pyri, Peck.

Anglesea—Wenzel.

X. celsus, Eich.

Dacosta, rare—Wenzel. New Jersey—Julich.

X. fuscatus, Eich.

New Jersey—Julich.

X. xylographus, Say.

Dacosta, not rare—Wenzel. Anglesea, in July—Schwarz. New Jersey—Julich.

X. pubescens, Zimm.

Dacosta, not rare—Wenzel. On Oak—Julich.

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X. cœlatus, Eich.

Generally distributed, not rare—Wenzel. New Jersey—Julich.

DRYOCETES, Eich.

D. granicollis, Lec.

New Jersey—Julich.

TOMICUS, Latr.

T. calligraphus, Germ.

Generally distributed, common—Wenzel. Brigantine Beach, mainland, in September—Hamilton. New Jersey—Julich.

T. cacographus, Lec.

Same localities as before.

T. pini, Say.

Newark. Determined by myself. New Jersey—Julich.

MICRACIS, Lec.

M. asperula, Lec.

New Jersey—Julich.

M. opacicollis, Lec.

Boring in the pith of small oak twigs, New Brunswick.

SCOLYTUS, Geoff.

S. quadrispinosus, Say.

Generally distributed, not rare—Wenzel. Newark. New Jersey—Julich.

S. rugulosus, Ratz.

Peach and Wild Cherry—Julich.

CHRAMESUS, Lec.

C. icoriæ, Lec.

Hudson county—Linell. Common in hickory twigs, New Brunswick. New Jersey—Julich.

PHLÆOTRIBUS, Latr.

P. liminaris, Harr.

New Jersey—Julich.

P. frontalis, Oliv.

New Jersey—Julich.

HYLESINUS, Fabr.

H. aculeatus, Say.

On Ash, New Jersey—Julich.

H. opaculus, Lec.

New Jersey—Julich.

H. trifolii, L.

The clover-root borer. Bergen—Julich.

PHLÆOSINUS, Chap.

P. serratus, Lec.

Anglesea, rare—Wenzel.

P. dentatus, Say.

Anglesea, in July—Schwarz. Brigantine Beach, in September—Hamilton. In Red Cedar—Julich.

CARPHOBORUS, Eich.

O. bifurcus, Eich.

New Jersey—Julich.

DENDROCTONUS, Er.

D. terebrans, Oliv.

Generally distributed, common—Wenzel. Caldwell, common—Crane. New Jersey—Julich.

CRYPTURGUS, Er.

C. atomus, Lec.

New Jersey—Julich.

HYLASTES, Er.

H. porculus, Er.

Generally distributed, common—Wenzel.

H. cavernosus, Zimm.

New Jersey—Julich.

HYLURGOPS, Lec.

H. pinifex, Fitch.

New Jersey—Julich.

The list is very incomplete in this family, because collectors have not generally sought for the species and they are difficult of determination.

Family ANTHRIBIDÆ.

EURMYCTER, Lec.

E. fasciatus, Oliv.

On the Newark list. Sea-coast, rare—Wenzel. Orange, Snake Hill—Julich.

TROPIDERES, Sch.

T. rectus, Lec.

Sea-coast, rare—Wenzel.

ALLANDRUS, Lec.

A. bifasciatus, Lec.

On Linden—Julich.

HORMISCUS, Waterh.

H. saltator, Lec.

Gloucester, rare—Wenzel. Anglesea, in July—Schwarz. New Jersey—Julich.

H. nova species, Schwarz dixit.

Anglesea, in July—Schwarz.

EUSPHYRUS, Lec.

E. walshii, Lec.

Gloucester, rare—Wenzel.

PIEZOCORYNUS, Sch.

P. mixtus, Lec.

New Jersey—Julich.

P. moestus, Lec.

Sea-coast, rare—Wenzel. Brigantine Beach, in September,
rare—Hamilton.

CRATOPARIS, Sch.

C. lunatus, Fabr.

Occurs throughout the State more or less commonly.

BRACHYTARSUS, Sch.

B. alternatus, Say.

Hudson county—Linell. New Jersey—Julich.

B. tomentosus, Say.

Gloucester, one specimen only—Wenzel. Hudson county—
Linell. New Jersey—Julich.

B. variegatus, Say.

Generally distributed, not uncommon—Wenzel, Liebeck.

ANTHRIBULUS, Léc.

A. rotundatus, Lec.

Anglesea—Wenzel.

ORDER LEPIDOPTERA.

Family NYMPHALIDÆ.

Sub-Family SATYRINÆ.

SATYRUS, Westw.

S. pegala, Fabr.

Rare along the coast of southern New Jersey. Seven Mile
Beach, Mount Holly—Aaron.

S. alope, Fabr.

Common throughout the State.

Var. maritima, Edw.

Jamesburg, Ocean county, Cape May county, and there the
common form; at Jamesburg it runs into the typical form.

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Form nephela, Kirby.

Occurs with and generally replaces the typical form in the northern counties. Warren county; common.

DEBIS, Westw.

D. portlandia, Fabr.

General throughout the State, but rather local. Newark. Caldwell, rare—Crane.

NEONYMPHA, Westw.

N. canthus, Bd.-Lec.

Mount Holly, Westville—Aaron. Newark. Quite generally distributed, but rare.

N. areolatus, Sm.-Abb.

Atlantic City, Seven Mile Beach—Aaron. Morristown—Edwards. A southern species; its occurrence in the State occasional.

N. eurytris, Fabr.

Common throughout the State.

N. sosybius, Fabr.

Mount Holly—Aaron. Occasional in southern New Jersey.

Sub-Family NYMPHALINÆ.

APATURA, Fabr.

A. clyton, Bd.-Lec.

New Jersey is included in the faunal map of this species, but I have no record of its capture.

LIMENITIS, Fabr.

L. ursula, Fabr.

Common throughout the State.

L. arthemis, Dru.

Schooley's Mountain—Aaron. Also recorded on the Newark list.

Var. proserpina, Edw.

On the Newark list, without definite locality.

L. disippus, Gdt.

Common throughout the State.

GRAPTA, Kirby.**G. interrogationis**, Fabr.

Both forms of the species—*fabricii*, Edw., and *umbrosa*, Lint.
—are rather common throughout the State.

G. comma, Harr.

Less common, but equally distributed throughout the State.
Forms *harrisii*, Edw., and *dryas*, Edw.

G. faunus, Edw.

Schooley's Mountain—Aaron. A northern and mountain form.

G. progne, Cram.

Caldwell, common—Crane.

G. J-album, Bd.-Lec.

Schooley's Mountain—Aaron. Also recorded on the Newark list. Caldwell, rare—Crane. *

VANESSA, Fabr.**V. antiopa**, Linn.

Common throughout the State, the larvæ often defoliating Willow.

V. milberti, Gdt.

Schooley's Mountain—Aaron. Orange Mountains, rare. It is a northern form.

PYRAMEIS, Doubl.**P. atalanta**, Linn.

Common throughout the State.

P. huntera, Fabr.

Common throughout the State.

P. cardui, Linn.

Common throughout the State.

JUNONIA, Doubl.

J. cœnia, Hb.

Common seasonally, south of Trenton—Aaron. Newark,
also seasonally abundant. Caldwell, rare—Crane.

EUPTOIETA, Doubl.

E. claudia, Cram.

Cape May, Atlantic City, Mount Holly—Aaron. Occurs
also northwardly, near the coast, and is on the Newark list.

AGRAULIS, Bd.-Lec.

A. vanillæ, Linn.

Cape May, Seven Mile Beach—Aaron. Camden county.

ARGYNNIS, Fabr.

A. idalia, Dru.

Found throughout the State; usually not common. Caldwell,
common—Crane. Newark, in July—Seib.

A. cybele, Fabr.

Common throughout the State.

A. aphrodite, Fabr.

Schooley's Mountain—Aaron. Orange Mountains. Also on
the Newark list, without definite locality.

A. myrina, Cram.

Common throughout the State. Abundant on cranberry bogs.

A. bellona, Fabr.

Found throughout the State; more common northwardly.

PHYCIODES, Doubl.

P. nycteis, Doubl.-Hew.

Gloucester, Mount Holly—Aaron. Also on the Newark list.
Not common.

P. tharos, Dru.

Common throughout the State.

P. batesii, Reak.

Gloucester—Aaron. Not on the Newark list.

MELITÆA, Fabr.**M. phaeton**, Dru.

Occurs all over the State, in fresh-water swamps.

M. harrisii, Scudd.

Schooley's Mountain—Aaron. Also on the Newark list.

DANAIS, Latr.**D. archippus**, Fabr.Common throughout the State. Larva on *Asclepias*.

Sub-Family LIBYTHEINÆ.**LIBYTHEA, Fabr.****L. bachmanni**, Kirtl.

Gloucester—Aaron. Also on the Newark list. Common at Sandy Hook in 1886—Beutenmüller.

Family LYCÆNIDÆ.**Sub-Family ERYCININÆ.****CALEPHELIS, Grt. & Rob.****C. borealis**, Grt. & Rob.

Opposite Delaware Water Gap—Aaron. Not on the Newark list.

Sub-Family LYCÆNINÆ.**THECLA, Fabr.****T. halesus**, Cram.

Cape May, Gloucester, near Westville—Aaron. Also on the Newark list.

T. m-album, Bd.-Lec.

Atlantic City—Aaron. Not on the Newark list.

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T. favonius, Sm.-Abb.

On the Newark list, without definite locality.

T. humuli, Harr.

Quite generally distributed, but nowhere common.

T. melinus, Hüb.

On the Newark list, without definite locality. The State is included in Mr. Scudder's faunal map of this species.

T. acadica, Edw.

New Jersey is included in Mr. Scudder's faunal map of this species, but I have received no records of its capture.

T. edwardsii, Saund.

Recorded on the Newark list, without definite locality.

T. calanus, Hüb.

Found throughout the State, but not common. Caldwell, rare—Crane. Newark, in July—Seib.

T. strigosa, Harr.

On the Newark list, without definite locality.

T. smilacis, Bd.-Lec.

Locally not rare in the Passaic Valley region, early in spring. Newark, in May—Seib.

T. augustus, Kirby.

Gloucester, Westville, Mount Holly—Aaron. Not taken by the Newark collectors.

T. irus, Godt.

Gloucester—Aaron. Westville. Also taken by the Newark collectors.

T. henrici, Grt. & Rob.

Westville, local; also on the Newark list.

T. nippon, Hüb.

Gloucester, Mount Holly—Aaron. Westville, rare; also on the Newark list.

T. læta, Edw.

Atlantic City—Aaron. Not on the Newark list.

T. titus, Fabr.

Mount Holly—Aaron. Also on the Newark list.

LYCÆNA, Fabr.**L. couperii, Grote.**

New Jersey is included in Mr. Scudder's faunal map of this species, and he has it recorded from the vicinity of New York City. I know of no specimens from this State.

L. pseudargiolus, Bd.-Lec.

This species and its various forms and races are quite common throughout the State, but somewhat local.

L. comyntas, Godt.

Common throughout the State.

CHRY SOPHANUS, Doubl.**C. thoe, Bd.-Lec.**

Schooley's Mountain—Aaron. Recorded on the Newark list. Said to be very local. Caldwell, rare—Crane. Newark, in July—Seib.

C. expixanthe, Bd.-Lec.

Dacosta, not rare—Aaron. Not on the Newark list.

C. hypophlœus, Bdv.—(americana, D'Urb.)

Common throughout the State.

FENISECA, Grt.**F. tarquinius, Fabr.**

Mount Holly—Aaron. Also on the Newark list. Seems generally distributed, but local and nowhere common.

Family PAPILIONIDÆ.**Sub-Family PAPILIONINÆ.****PAPILIO, Linn.****P. ajax, Linn.**

Recorded on the Newark list, and said to be not rare seasonally and locally. There is considerable Paw-Paw in the State.

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P. philenor, Linn.

Atlantic City, Westville, Mount Holly—Aaron. Quite generally distributed throughout the State; not common.

P. brevicauda, Saund.

Pemberton—Aaron. Mr. Aaron marks the name with a (?). I have seen a specimen from Hightstown, which, with a different locality label, would pass very well for this species.

P. asterias, Fabr.

Common throughout the State.

P. troilus, Linn.

Common throughout the State.

P. turnus, Linn.

Common throughout the State. The dimorphic female, *glancus*, is rare.

P. crespontes, Cram.

Trenton—Aaron. On the Newark list. Isolated specimens occur throughout the State. Caldwell—Crane.

Sub-Family PIERINÆ.

CALLIDRYAS, Bdv.

C. eubule, Linn.

Mount Holly, Atlantic City—Aaron. Also on the Newark list. Long Branch—Edwards.

ANTHOCHARIS, Bdv.

A. genutia, Fabr.

Westville, Mount Holly, Seven Mile Beach—Aaron. Timber Creek.

COLIAS, Fabr.

C. eurytheme, Bdv.

Mount Holly—Aaron. Occasionally taken by members of the Newark Society.

C. philodice, Godt.

Common throughout the State.

TERIAS, Swains.**T. nicippe**, Cram.

Mount Holly, Westville, Atlantic City—Aaron. I have seen it quite generally throughout the State, but nowhere common. Caldwell, rare—Crane. Newark, in September—Seib.

T. lisa, Bd.-Lec.

Not rare throughout the State. Newark, in October—Seib.

PIERIS, Schr.**P. protodice**, Bdv.

Mount Holly, Westville—Aaron. Occasional throughout the southern part of the State.

P. rapæ, Linn.

The common cabbage butterfly; found everywhere.

P. oleracea, Bdv.

Orange Mountains; rare. Probably more common in the hilly north of New Jersey.

Family HESPERIDÆ.
EUDAMUS, Swains.**E. pylades**, Scudd.

Quite generally distributed, not common—Aaron.

E. bathyllus, Sm.-Abb.

Common throughout the State.

E. lycidas, Sm.-Abb.

Quite generally distributed, but rare. Taken both by the Philadelphia and Newark collectors. Caldwell, common—Crane. Taken in June—Seib.

E. cellus, Bd.-Lec.

Taken rarely by the Newark collectors.

E. tityrus, Fabr.

Common throughout the State. Taken in July—Seib.

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E. proteus, Linn.

Cape May—Aaron. Also on the Newark list.

NISONIADES, Speyer.

N. brizo, Bd.-Lec.

Gloucester—Aaron. Westville. Also on the Newark list.
Newark, in May—Seib. Not rare.

N. icelus, Lint.

Opposite Delaware Water Gap—Aaron. Also on the Newark list.

N. lucilius, Lint.

The State is included in Mr. Scudder's faunal map of the species, but it has not been taken by collectors, so far as I know.

N. persius, Scudd.

This is in the same case as the preceding.

N. ausonius, Lint.

Said to occur in the State, but I have seen no positive records of the fact.

N. martialis, Scudd.

Taken in New Jersey—Aaron. Not on the Newark list.

N. juvenalis, Fabr.

Common near Philadelphia, and quite generally distributed throughout the State, in my experience. Newark, in July—Seib. Caldwell, rare—Crane.

N. horatius, Scudd.

Occurs in this State, according to Scudder's faunal map, but I know of no actual records.

N. torrentius, Scudd.

This is in the same case with the preceding.

PHOLISORA, Speyer.

P. catullus, Fabr.

Common throughout the State.

PYRGUS, Westw.

P. tessellata, Scudd.

Quite common throughout the State.

P. centaureæ, Ramb.

Recorded from all land sides of the State and almost certain to occur here.

ANCYLOXYPHA, Feld.**A. numitor**, Fabr.

Common throughout the State.

AMBLYSCHIRTES, Speyer.**A. vialis**, Edw.

Locally common throughout the State. Not on the Newark list.

A. samoset, Scudd.

Said to occur from Maine to Georgia, but has not been actually recorded from this State.

PAMPHILA, Fabr.**P. massasoit**, Scudd.

Gloucester—Aaron. Swamps near Westville. Also on the Newark list. Not common.

P. zabulon, Bd.-Lec.

Not rare throughout the State. The form *hobomock* is more common, while *pocahontas* is rare.

P. sassacus, Harr.

Trenton—Aaron. Also on the Newark list. Caldwell—Crane.

P. metea, Scudd.

Schooley's Mountain—Aaron.

P. seminole, Scudd.

New Jersey—Edwards. Not taken by either the Philadelphia or Newark collectors.

P. leonardus, Harr.

Rare in the eastern part of the State. On the Newark list.

P. huron, Edw.

Mount Holly—Aaron. Also on the Newark list.

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P. phylæus, Dru.

Atlantic City—Aaron. I have taken this at Clifton, rarely.

P. otho, Sm.-Abb.

Gloucester, &c.—Aaron. Also on the Newark list. Not rare throughout the State. The form *egeremet* is more common.

P. peckius, Kirby.

Common throughout the State.

P. mystic, Scudd.

Trenton, Schooley's Mountain—Aaron. Also on the Newark list.

P. cernes, Bd.-Lec.

Common throughout the State.

P. manataaqua, Scudd.

Generally distributed, but not common. Taken by Mr. Aaron, and also on the Newark list.

P. verna, Edw.

Recorded by Mr. Aaron, without definite locality.

P. metacomet, Harr.

Taken by Mr. Aaron, and also on the Newark list. Caldwell—Crane.

P. accius, Sm.-Abb.

Salem—Aaron. Not on the Newark list.

P. panoquin, Scudd.

Atlantic City—Edwards. New Jersey—Aaron. Not on the Newark list.

P. ocola, Edw.

Salem, rare—Aaron.

P. bimacula, Grt. & Rob.

A specimen labeled "N. J." is in Mr. Aaron's collection; source unknown.

P. pontiac, Edw.

Westville—Aaron. "New Jersey"—Edwards. Not on the Newark list.

P. delaware, Edw.

East bank of Delaware Bay, near Maurice River—Aaron.

P. viator, Edw.

Cape May—Aaron. Also on the Newark list.

Family SPHINGIDÆ.

Sub-Family MACROGLOSSINÆ.

HEMARIS, Dalm.

H. tenuis, Grt.

Not rare. Taken by the Newark collectors and generally distributed in the State.

H. diffinis, Bdv.

Common all over the State.

H. axillaris, Grt. & Rob.

Morris Plains, rare—Neumoegen.

H. gracilis, Grt. & Rob.

Not rare, but not taken by the Newark collectors.

H. thysbe, Fabr.

Common. Caldwell—Crane. Newark, in August—Seib.

Var. floridensis, Grt. & Rob.

Morris Plains, rare—Neumoegen.

Sub-Family CHEROCAMPINÆ.

ÆLLOPOS, Hüb.

A. tantalus, Linn.

An occasional visitor; a typically southern species, yet not infrequently taken along the coast. On the Newark list.

ENYO, Hüb.

E. lugubris, Linn.

Also a southern species which is occasionally taken in New Jersey. Not on the Newark list.

AMPHION, Hüb.

A. nesus, Cram.

Common locally, but by no means generally distributed. On the Newark list. May and June—Seib.

THYREUS, Swains.

T. abbotii, Swains.

Usually common. The ugly larva on Grape is familiar to most. Caldwell, rare—Crane. May—Seib.

DEIDAMIA, Clem.

D. inscripta, Harr.

Rare. Seems to be generally distributed, but never obtrusive. Taken by the Newark collectors.

DEILEPHILA, Ochs.

D. gallii, var. chamænerii, Harr.

Not common; seems local and rather more northern. Taken at Newark. Caldwell, rare—Crane.

D. lineata, Fabr.

Common throughout the State. The imago is especially fond of flying about the newly-opened flowers of *Oenothera* (Evening Primrose). July and August—Seib.

CHÆROCAMPA, Dup.

C. tersa, Linn.

Rather a southern species, habitally. Taken by the Newark collectors. Caldwell, common—Crane. May, July and September—Seib.

ARGEUS, Hüb.

A. labruscæ, Linn.

An occasional visitor from southern climes. I have picked up a specimen on the beach. Not on the Newark list.

PHILAMPELUS, Harr.

P. linnei, Grt. & Rob.

Occasional along the coast. Not on the Newark list.

P. vitis, Linn.

Occasional along the coast. Taken by the Newark collectors.

P. pandorus, Hüb.

Common all over the State. The larva feeds on Grape.
August—Seib.

P. achemon, Dru.

Common all over the State. The larva on Grape. August—
Seib.

AMPELOPHAGA, Brem. & Grey.

A. chærilus, Cram.

Common. Larva on Grape and *Ampelopsis*.

A. myron, Cram.

Common. Larva on Grape and *Ampelopsis*. August—Seib.

A. versicolor, Harris.

Rare. Local in occurrence and seldom in any numbers.
Taken by the Newark collectors. Larva on "Button-ball."

Sub-Family SPHINGINÆ.**DILOPHONOTA, Burm.**

D. ello, Linn.

Rare. A visitor from the South, and sometimes in some numbers. Taken by the Newark collectors.

D. obscura, Fabr.

A very occasional visitor. Recorded on the Newark list. At home in the West Indies.

PROTOPARCE, Burm.

P. celeus, Hüb.

Not usually common. The larva on Potato, throughout the State.

P. carolina, Linn.

Common. The larva is the well-known tomato worm, found everywhere in the State.

P. rustica, Fabr.

Not common. I have seen it from the State in some New York collection. Not taken by the Newark collectors.

P. cingulata, Fabr.

Rare. Generally distributed, but nowhere abundant. On the Newark list.

SPHINX, Linn.

S. kalmiæ, S. & A.

Not rare. Generally distributed. Taken by Newark collectors. June—Seib.

S. drupiferarum, S. & A.

Generally distributed. Taken by Newark collectors. Caldwell, rare—Crane. July and August—Seib.

S. gordius, Cram.

Not usually common. Generally distributed. It is on the Newark list. June—Seib. Caldwell, common—Crane.

S. luscitiosa, Clem.

Rare, and apparently very local; food-plant, Willow. Taken by Newark collectors.

S. chersis, Hüb.

Not usually common, somewhat local, but from all parts of the State. July—Seib.

S. eremitus, Hüb.

Not rare, and sometimes quite common. Recorded on the Newark list. Caldwell, rare—Crane.

S. plebeius, Fabr.

Not rare. Generally distributed. Taken by the Newark collectors. Caldwell, rare—Crane. In June—Seib.

DOLBA, Walk.

D. hylæus, Dru.

Generally distributed, but by no means common. Taken by the Newark collectors. Caldwell, rare—Crane.

CHLÆNOGRAMMA, Smith.**C. jasminearum**, Bdv.

Rare. Taken by Newark collectors. Caldwell, rare—Crane.

CERATOMIA, Harris.**C. amyntor**, Hüb.

Not rare. Generally distributed throughout the State. The larva feeds on Elm and Linden, and is readily recognized by the four thoracic horns in addition to the usual anal horn.

C. undulosa, Wlk.

Not usually rare. Quite generally distributed. Caldwell, rare—Crane. June and August—Seib.

ELLEMA, Clem,**E. harrisii**, Clem.Very rare. Feeds, in the larva state, on *Conifers*. Taken by Newark collectors.**E. coniferarum**, S. & A.Rare. Perhaps even more so than the preceding. Also on *Conifers*. It is on the Newark list.**Sub-Family SMERINTHINÆ.****TRIPTOGON, Brem.****T. modesta**, Harr.

Rare. One of the largest and the handsomest of our species. The larva on Poplar. Taken by Newark collectors.

SMERINTHUS, Latr.**S. geminatus**, Say.

Common. Generally distributed. On the Newark list. Caldwell, rare—Crane. In August—Seib.

PAONIAS, Hüb.**P. excæcatus**, S. & A.

Common throughout the State.

P. myops, S. & A.

Rare. Locally the larvæ are often somewhat common on Wild Cherry, *Prunus serotina*. Caldwell, rare—Crane. Newark.

P. astylus, Dru.

Very rare, and apparently very local. Taken by the Newark collectors. June and July—Seib.

CRESSONIA, Grt. & Rob.

O. juglandis, S. & A.

Not rare, yet usually by no means common. Generally distributed. Caldwell, common—Crane. Newark, in June—Seib.

Family SESIIDÆ.

MELITTIA, Hüb.

M. ceto, Westw.

Generally distributed. The larva bores in the roots and stems of *Cucurbitaceæ*. Caldwell, common—Crane. Newark, in July—Seib.

ALCATHOE, Hy. Edw.

A. caudatum, Harr.

Caldwell, rare—Crane.

TROCHILIUM, Scop.

T. apiforme, Linn.

Rare. Taken by Newark collectors.

BEMBECIA, Hüb.

B. marginata, Harr.

Rare. Generally distributed. The larva bores in canes of Blackberry.

FATUA, Hy. Edw.

F. denudata, Harr.

Morris, Plains, rare—Neumoegen.

PODOSESIA, Moeschl.**P. syringæ**, Harris.Common. The larva bores in *Syringa*.**SANNINA, Walk.****S. exitiosa**, Say.

This is the well-known "Peach Borer," and occurs all over the State. May and June—Seib.

SESIA, Fabr.**S. pictipes**, Grt. & Rob.

Not common. Generally distributed. Taken by the Newark collectors.

S. pyri, Harr.

Larva in Apple and Pear; usually not common.

S. acerni, Clem.

Larva in Maple; often quite common.

S. tipuliformis, Linn.

Larva in Currant and Gooseberry; sometimes quite destructive.

S. albicornis, Hy. Edw.

Morris Plains, rare—Neumoegen.

Family THYRIDÆ.**THYRIS, Illiger.****T. maculata**, Harr.

Not common. Taken occasionally on flowers, quite early in the season. Caldwell, rare—Crane.

T. lugubris, Boisd.

Not rare. Taken quite commonly in Ocean county and Atlantic county. Not taken by the Newark collectors. Morris Plains—Neumoegen.

T

Family AGARISTIDÆ.

ALYPIA, Hüb.

A. octomaculata, Fabr.

Common about cities, on Grape. Quite rarely found in the open country. Sometimes quite destructive, in June—Seib.

PSYCHOMORPHA, Harr.

P. epimenis, Dru.

Rare. The larva on Grape. Taken by the Newark collectors.

EUDRYAS, Boisd.

E. unio, Hüb.

Not usually common. Local, but occurring all over the State. Larva on Grape. Caldwell, common—Crane. June—Seib.

E. grata, Fabr.

Rare; local. Larva on Grape. Caldwell—Crane.

Family SYNTOMIDÆ.

LYCOMORPHA, Harris.

L. pholus, Dru.

Quite common late in summer, on Golden Rod.

Family CTENUCHIDÆ.

SCOEPSIS, Walk.

S. fulvicollis, Hüb.

Not rare. Generally distributed.

CTENUCHA, Kirby.

C. virginica, Charp.

Not common. Often taken on *Spirea* when in bloom.

Family PYROMORPHIDÆ.**HARRISINA, Pack.**

H. americana, Harr.

Common locally. The larva is sometimes quite destructive to Grape.

PYROMORPHA, H-S.

P. dimidiata, H-S.

Rare. I have taken two specimens in Ocean county. Not taken by the Newark collectors.

Family LITHOSIIDÆ.**NOLA, Leach.**

N. melanopa, Zell.

Not common. A few specimens at light.

Two species not satisfactorily determinable, taken by me this season (1889).

ARGYROPHYES, Grt.

A. nigrofasciata, Zell.

Rare. Two specimens at light. Not on the Newark list.

OLEMENSIA, Pack.

O. albata, Pack.

Rare. Taken by Newark collectors.

HYPOPREPIA, Hüb.

H. fucosa, Hüb.

Common. Beaten from Pines; also in mossy meadows. July—Seib.

EUPHANESEA, Pack.

E. mendica, Walk.

Not rare. I have taken it in the Orange Mountains. On the Newark list.

Family ARCTIIDÆ.

CROCOTA, Hüb.

O. rubicundaria, Hüb.

Not rare. Quite generally distributed. Taken by Newark collectors.

O. brevicornis, Walk.

I have taken this in Ocean county. Not on the Newark list.

O. ferruginosa, Walk.

Caldwell, rare—Crane.

O. opella, Grote.

I have taken this near Jamesburg.

UTETHEISA, Hüb.

U. bella, Linn.

Locally common. I have taken it on the beach at Sandy Hook.

CALLIMORPHA, Latr.

O. clymene, Brown.

Taken by the Newark collectors. Locally common.

O. militaris, Harris.

Taken by Newark collectors. Not rare.

O. contigua, Walk.

Recorded on the Newark list.

O. fulvicosta, Clem.

Taken by Newark collectors.

I have taken none of these forms in the State myself, but have taken them in the same faunal district. The species are locally common.

ARCTIA, Schrank.

A. virgo, Linn.

Not usually common. Generally distributed. Caldwell, common—Crane.

A. saundersii, Grt.

Rare. A single specimen has been taken near Newark.

A. phyllira, Dru.

Not commonly taken by Newark collectors. Caldwell, common—Crane.

A. figurata, Dru.

Rare. Only a few specimens taken.

A. nais, Dru.

Common. Found all over the State. May and September—Seib.

A. decorata, Saund.

Not common. Taken by Newark collectors.

A. virguncula, Kirby.

Not common. It is on the Newark list.

A. arge, Dru.

Not common. More general in the northern parts of the State. It is on the Newark list. Caldwell, rare—Crane. May—Seib.

PYRRHAROTIA, Pack.**P. isabella**, S. & A.

A common species all over the State. May—Seib.

PHRAGMATOBIA, Harris.**P. rubricosa**, Harris.

Not common. Taken by Newark collectors. Caldwell, rare—Crane.

LEUCAROTIA, Pack.**L. acræa**, Dru.

Common along the coast. Newark. Caldwell. Readily attracted by light.

SPILOSOMA, Steph.**S. virginica**, Fabr.

Common throughout the State.

S. latipennis, Stretch.

Rare. Taken in fresh water—swampy localities.

S. antigone, Strk.

Rare. Taken near Newark. I have myself taken it on Staten Island, N. Y., but not as yet in New Jersey. Mr. Beutenmüller says the larva feeds in mushrooms.

HYPHANTRIA, Harris.

H. cunea, Dru.

The parent of the common Fall Web Worm. Common throughout the State.

EUCHÆTES, Harris.

E. egle, Drury.

Common. Larva on *Asclepias*. June—Seib.

E. eglenensis, Clem.

More rare.. Taken by Newark collectors.

E. oregonensis, Stretch.

Not recorded from New Jersey, but I have seen it from Long Island, and it is almost certain to occur with us.

E. collaris, Fitch.

Common. Generally distributed. Larva on *Asclepias*.

EOPANTHERIA, Hüb.

E. scribonia, Stoll.

Not rare. The larva is more commonly seen than the imago, and is more abundant southwardly.

HALESIDOTA, Hüb.

H. tessellata, S. & A.

Common throughout the State. The larva quite a nuisance on shade trees. June—Seib.

H. caryæ, Harris.

Common. Generally distributed. May—Seib.

Family LIPARIDÆ.

ORGYIA, Ochs.

O. leucosigma, S. & A.

Common throughout the State. The larva is an indiscriminate feeder on shade trees.

O. obliviosa, Hy. Edw.

Probably only a variety of the preceding. Taken near the Hudson.

PARORGYIA, Pack.

P. leucophæa, S. & A.

Not common. Recorded on the Newark list. Morris Plains, rare—Neumoegen.

P. clintonii, Grt. & Rob.

Not common. Recorded on the Newark list.

P. parallela, Grt. & Rob.

Not common. Recorded on the Newark list.

P. achatina, S. & A.

Not common. Recorded on the Newark list.

P. cinnamomea, Grt. & Rob.

I took a specimen of this species years ago near Jersey City.

LAGOA, Harris.

L. crispata, Pack.

Not rare. Generally distributed.

Family LIMACODIDÆ.

EUOLEA, Hüb.

E. querceti, H-S.

Not rare. Generally distributed.

E. bifida, Pack.

Recorded on the Newark list.

E. pænulata, Clem.

Recorded on the Newark list.

PARASA, Moore.

P. chloris, H-S.

Not usually rare. Quite generally distributed. Caldwell, rare—Crane.

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P. fraterna, Grt.

Not rare. I have seen it only from the eastern part of the State.

EMPRETIA, Clem.

E. stimulea, Clem.

Common. Generally distributed. Larva on Pear, Cherry and Apple.

PHOBETRON, Hüb.

P. pithecium, S. & A.

Not common. Generally distributed. Larva also on Pear.

LIMACODES, Latr.

L. scapha, Harris.

Not rare. Generally distributed. Rare at Caldwell—Crane.

L. biguttata, Pack.

Taken by Newark collectors.

L. Y-inversa, Pack.

Not rare. Generally distributed.

L. rectilinia, Grt. & Rob.

I have had specimens from the northern part of the State, near the New York line.

L. fasciola, H-S.

Rather common. Generally distributed. Rare at Caldwell—Crane.

SISYROSEA, Grt.

S. inornata, Grt. & Rob.

Recorded by the Newark collectors.

ADONETA, Clem.

A. spinuloides, H-S.

Not rare. Quite generally distributed.

PACKARDIA, Grt. & Rob.

P. geminata, Pack.

I have determined this species from New Jersey. It is not on the Newark list.

P. ocellata, Grt.

Recorded on the Newark list.

P. albipuncta, Pack.

Recorded as taken near Newark.

P. nigripunctata, Good.

Recorded by the Newark collectors from that locality.

TORTRICIDIA, Pack.**T. testacea**, Pack.

Not common. Generally distributed. On the Newark list.

Family PSYCHIDÆ.**PSYCHE**, Ochs.**P. confederata**, Grt.

Recorded on the Newark list.

THYRIDOPTERYX, Steph.**T. ephemeræformis**, Steph.The common "bag-worm." Often very injurious to *Arbor vitæ*, and feeding quite indiscriminately on shade trees.**PEROPHORA**, Harris.**P. melsheimerii**, Harr.

Rare. Generally distributed. It is on the Newark list, and I have it from Ocean county. June—Seib.

Family PTILODONTIDÆ.**ICHTHYURA**, Hüb.**I. inclusa**, Hüb.

Common. Generally distributed.

I. albosigma, Fitch.

More rare. Recorded on the Newark list. June—Seib.

APATELODES, Pack.

A. torrefacta, S. & A.

Not common. Generally distributed.

A. angelica, Pack.

Rare. I have seen specimens from the State. Not on the Newark list. Lake Hopatcong—Palm.

DATANA, Walk.

D. ministra, Dru.

Common. The larva is the well-known yellow-necked apple tree caterpillar.

D. angusii, Grt. & Rob.

Locally common. On the Newark list.

D. major, Grt. & Rob.

Not common. Taken by the Newark collectors.

D. integerrima, Grt. & Rob.

Not rare. Taken by the Newark collectors. Common at Caldwell—Crane.

D. contracta, Walk.

Locally common. Generally distributed.

D. perspicua, Grt. & Rob.

Common. Generally distributed.

NADATA, Walk.

N. gibbosa, S. & A.

Not common. Generally distributed. Caldwell, rare—Crane. August—Seib.

N. doubledayi, Pack.

Rare. On the Newark list.

HYPARPAX, Hüb.

H. aurora, S. & A.

Not common. Generally distributed. Newark, in June, August and September—Seib.

NOTODONTA, Ochs.

N. stragula, Grt.

Not common. On the Newark list. Caldwell, rare—Crane.
July and August—Seib.

N. basitriens, Walk.

Not on the Newark list, but I have had it from the State.
Probably rare.

LOPHODONTA, Pack.

L. ferruginea, Pack.

On the Newark list. Not common.

L. angulosa, S. & A.

Taken by the Newark collectors. June—Seib.

L. georgica, H-S.

Not common. Taken by the Newark collectors.

PHEOSIA, Hüb.

P. rimosa, Pack.

Rare. Taken near Newark. Also in Ocean county.

NERICE, Walk.

N. bidentata, Walk.

Not rare. Generally distributed. Caldwell, rare—Crane.

EDEMA, Walk.

E. albifrons, S. & A.

Common at Newark. Readily attracted to light. Rare at
Caldwell—Crane.

SEIRODONTA, Grt. & Rob.

S. bilineata, Pack.

Not rare. Generally distributed. Not on the Newark list.

CEDEMASIA, Pack.

O. concinna, S. & A.

Common. Generally distributed.

O. eximia, Grt.

Morris Plains, rare—Edwards.

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O. badia, Pack.

More rare. Taken near Newark. Morris Plains, rare—
Edwards.

DASYLOPHIA, Pack.

D. anguina, S. & A.

Not common. I have taken it near Jersey City. Newark, in
July—Seib.

D. interna, Pack.

Taken near Jamesburg. Not on the Newark list.

CŒLODASYS, Pack.

C. leptinoides, Grt.

Newark—Angelman. Morris Plains, rare—Neumoegen.

C. unicornis, S. & A.

Common, locally. On the Newark list.

C. apicalis, Grt. & Rob.

Recorded on the Newark list.

C. biguttata, Pack.

Not rare. Generally distributed.

Var. cinereofrons, Pack.

With the type form, in equal numbers.

C. telifer, Grt.

Recorded on the Newark list.

IANASSA, Walk.

I. lignicolor, Walk.

Not common. Generally distributed. Not on the Newark
list. Caldwell, rare—Crane.

HETEROCAMPA, Doubl.

H. obliqua, Pack.

Var. brunnea, Grt. & Rob.

H. trouvelotii, Pack.

H. pulvereae, Grt. & Rob.

Caldwell, rare—Crane. Newark—Angelman.

- H. marthesia*, Cram.
H. guttivitta, Walk.
H. biundata, Walk.
H. marina, Pack.

All the above are on the Newark list. The following in addition I know occur in the State :

- H. cinerea*, Pack.
H. unicolor, Pack.
 Caldwell, rare—Crane.
H. subalbicans, Grt.

These I have either taken myself, or seen from the State.

CERURA, Schrank.

- C. borealis*, Boisd.
C. occidentalis, Lint.
C. cinerea, Walk.
C. multiscripta, Riley.

All of these are on the Newark list. I have taken *borealis* and *cinerea* only; *multiscripta* is rare.

Family PLATYPTERYGIDÆ.

PLATYPTERYX, Lasp.

- P. arcuata*, Walk.

Not rare. Generally distributed. Newark, in August—Seib.

PRIONIA, Hüb.

- P. bilineata*, Pack.

Rare. I have taken it in Ocean county.

DRYOPTERIS, Grt.

- D. rosea*, Walk.

Not rare. Generally distributed.

Family SATURNIIDÆ.

Sub-Family ATTACINÆ.

ATTACUS, Linn.

A. promethea, Dru.

Common all over the State.

A. angulifera, Walk.

Rare. Taken in small numbers all over the State.

A. cecropia, Linn.

Common. Sometimes injurious to Grape and small fruits.

SAMIA, Hüb.

S. cynthia, Drury.

Common along the main line of the Pennsylvania railroad, and for some distance around Jersey City and Newark. Feeds on the *Ailanthus*.

Sub-Family SATURNIINÆ.

ACTIAS, 'Leach.

A. luna, Linn.

Not rare. Generally distributed.

TELEA, Hüb.

T. polyphemus, Cram.

Common all over the State.

HYPERCHIRIA, Hüb.

H. io, Fabr.

Common all over the State. The larva sometimes injurious to Corn.

Family CERATOCAMPIDÆ.**EACLES, Hüb.**

E. imperialis, Drury.

Usually common throughout the State. Rare at Caldwell—Crane. Newark, in July—Seib.

CITHERONIA, Hüb.

C. regalis, Fabr.

Not common. Generally distributed.

SPHINGICAMPA, Walsh.

S. bicolor, Harris.

I have taken this on the coast in a single specimen. Not on the Newark list.

ANISOTA, Hüb.

A. stigma, Fabr.

A. senatoria, S. & A.

Caldwell, common—Crane.

A. virginiensis, Dru.

The latter is comparatively scarce, and is not on the Newark list. They are all generally distributed.

DRYOCAMPA, Harris.

D. rubicunda, Fabr.

Common throughout the State. Sometimes quite injurious to Maple.

Family LACHNÆIDÆ.**HEMILEUCA, Walk.**

H. maia, Drury.

Rare in this State, but I have seen it in collections marked "New Jersey."

OLISIOCAMPA, Curtis.

C. americana, Harris.

Newark, in June—Seib.

C. distria, Hüb.

Both species are quite common all over the State.

GASTROPACHA, Ochs.

G. americana, Harris.

Rare. Generally distributed. On the Newark list. Caldwell, rare—Crane.

ARTACE, Walk.

A. punctistriga, Walk.

Rare. Taken by Newark collectors.

TOLYPE, Hüb.

T. velleda, Stoll.

Not common. Generally distributed. Caldwell, rare—Crane. Newark, in September—Seib.

Family COSSIDÆ.

COSSUS, Fabr.

C. reticulatus, Lint.

Rare. Taken by Newark collectors.

PRIONOXYSTUS, Grt.

P. robinia, Peck.

Common. The larva bores in the Locust (*Robinia*). Rare at Caldwell—Crane. Newark, in June—Seib.

P. querciperda, Fitch.

Rare. Taken by Newark collectors.

ZEUZERA, Latr.

Z. æsculi, Linn.

Confined to the vicinity of Newark as yet, where it bores in the branches of Elm. A quite recent importation.

HEPIALUS, Fabr.**H. auratus**, Grt.

Recorded on the Newark list.

H. argenteomaculatus, Harr.

Caldwell, rare—Crane.

Family NOCTUIDÆ.

The list in this family is largely compiled from my own notes of collections and recorded localities. The species are generally distributed except where otherwise noted, and I have starred (*) those not on the Newark list. To this family belong the cut-worms, and sufficient material is not at hand to indicate the more accurate limits of local species.

Sub-Family CYMATOPHORINÆ.**LEPTINA, Gn.*****L. dormitans**, Gn.***L. doubledayi**, Gn.**THYATIRA, Ochs.*****T. pudens**, Gn.**PSEUDOTHYATIRA, Grt.****P. cymatophoroides**, Gn.*Var. expultrix*, Grt.

Caldwell, common—Crane.

HABROSYNE, Hüb.**H. scripta**, Gosse.**Sub-Family NOCTUINÆ.****DICOPIS, Grt.****D. depilis**, Grt.**D. muralis**, Grt.

Newark—Hampsen.

U

DEMAS, Steph.

D. flavicornis, Smith.
Newark ; rare.

CHARADRA, Walk.

C. deridens, Gn.

RAPHIA, Hüb.

R. frater, Grt.

FERALIA, Grt.

F. jocosa, Gn.

A rare species. Taken only by the Newark collectors. On Hemlock.

DIPHThERA, Hüb.

D. fallax, H-S.

Caldwell, rare—Crane. Newark, in May—Seib.

AORONYOTA, Ochs.

A. vinnula, Grt.

Newark, in June—Seib.

**A. grisea*, Walk.

A. tritona, Hüb.

A. occidentalis, Grt. & Rob.

Caldwell, common—Crane.

A. lobeliæ, Gn.

Newark, in June and August—Seib.

**A. morula*, Grt. & Rob.

**A. radcliffei*, Harv.

A. innotata, Gn.

A. betulæ, Riley.

A. americana, Harris.

Caldwell, common—Crane. Common also at New Brunswick.

**A. rubricoma*, Gn.

A. brumosa, Gn.

Newark, in May—Seib.

- A. noctivaga*, Grt.
Caldwell, rare—Crane.
- A. superans*, Gn.
Caldwell, rare—Crane.
- A. clarescens*, Gn.
Caldwell, common—Crane.
- A. ovata*, Grt.
- A. hamamelis*, Gn.
Caldwell, rare—Crane. Newark, in May—Seib.
- **A. hæsitata*, Grt.
- A. dissecta*, Grt. & Rob.
Caldwell, rare—Crane. Newark—Seib.
- A. sperata*, Grt.
- A. lithospila*, Grt.
- **A. connecta*, Grt.
- A. obliterata*, S. & A.
Common at Caldwell—Crane.

ARSILONCHE, Led.

- A. albovenosa*, Goetze.
Anglesea. Newark.

HARRISIMEMNA, Grote.

- H. trisignata*, Walk.
A rare and strikingly-marked species. Caldwell, one specimen—Crane.

MICROCCELIA, Gn.

- M. diphtheroides*, Gn.
Var. obliterata, Grt.
Caldwell, common—Crane. Newark—Seib.

BRYOPHILA, Tr.

- **B. lepidula*, Grt.
Caldwell, rare—Crane.

CHYTONIX, Grt.

**C. palliatricula*, Gn.

AGROTIS, Tr.

**A. sigmoides*, Gn.

**A. perattenta*, Grt.

A. phyllophora, Grt.

Newark, in May—Seib.

A. rubifera, Grt.

A. baja, S. V.

Caldwell, common—Crane.

A. normaniana, Grt.

Caldwell—Crane.

A. c-nigrum, Linn.

Caldwell, common—Crane. Found throughout the State.

A. bicarnea, Gn.

Caldwell, rare—Crane.

A. haruspica, Grt.

A. subgothica, Haw.

Caldwell, common—Crane. Found throughout the State.

A. tricola, Lint.

A. herelis, Grt.

A. plecta, Linn.

Caldwell, rare—Crane.

A. cupida, Grt.

A. alternata, Grt.

Newark—Angelman.

**A. brunneicollis*, Grt.

A. clandestina, Harris.

Caldwell, common—Crane. Newark, in June—Seib.

A. messoria, Harris.

A. murænula, Grt. & Rob.

- A. bostoniensis*, Grt.
A. pitychrous, Grt.
A. tessellata, Harris.
 Caldwell, rare—Crane.
A. campestris, Grt.
 **A. redimicula*, Morr.
A. geniculata, Grt. & Rob.
 Caldwell, rare—Crane.
A. badinodes, Grt.
 Caldwell, common—Crane.
 **A. collaris*, Grt. & Rob.
A. velleripennis, Grt.
 In the Newark collections.
 **A. pastoralis*, Grt.
 **A. morrisoniana*, Riley.
 **A. gladiaria*, Morr.
 Newark—Angelman.
 **A. venerabilis*, Walk.
 **A. volubilis*, Harv.
A. annexa, Tr.
A. malefida, Gn.
A. ypsilon, Rott.
 Common throughout the State.
A. saucia, Hüb.
 Caldwell, rare—Crane.
A. incivis, Gn.
 Caldwell, rare—Crane.
A. lubricans, Gn.

ANYTUS, Grt.

- A. sculptus*, Grt.

ADITA, Grt.

- **A. chionanthi*, S. & A.

A rare species, but occurring in single specimens in the State.
 Not yet taken by the Newark collectors.

MAMESTRA, Ochs.

M. purpurissata, Grt.

M. nimbosa, Gn.

Recorded on the Newark list. Caldwell, common—Crane.

M. imbrifera, Gn.

Recorded on the Newark list. Caldwell, rare—Crane.

M. latex, Gn.

M. adjuncta, Boisd.

Newark, in August—Seib.

M. lubens, Grt.

Newark, in June—Seib.

M. legitima, Grt.

M. lilacina, Harv.

Newark—Angelman.

M. rosea, Harv.

M. picta, Harris.

Caldwell, common—Crane. Newark, in June and August—Seib.

M. grandis, Boisd.

M. subjuncta, Grt. & Rob.

**M. distincta*, Hüb.

Caldwell, common—Crane.

**M. confusa*, Hüb.

Taken not uncommonly at sugar, by myself. Caldwell, rare—Crane. Newark—Seib.

**M. trifolii*, Rott.

I have taken this during the day on flowers of *Solidago*.
Caldwell, common—Crane.

M. pensilis, Grt.

**M. detracta*, Walk.

Newark, in June—Seib.

M. laudabilis, Gn.

On the Newark list. I have never taken it myself.

***M. olivacea, Morr.**

I have taken this in Ocean county.

M. lustralis, Grt.***M. meditata, Grt.**

Not rare. Taken at New Brunswick this season (1889), and elsewhere in former years.

M. renigera, Steph.***M. ectypa, Morr.**

Very rare. A unique specimen of this species taken by Mr. Neumoegen, near the Orange Mountains, forms the type of *M. bella*, Grt.

LUCERIA, Von Hein.**L. delicata, Grt.****L. passer, Gn.****HADENA, Schrank.****H. devastatrix, Brace.**

The larva of this species is one of the most injurious cut-worms we have in the State.

H. arctica, Boisd.

Caldwell, common—Crane. Newark, in September—Seib. Generally distributed.

***H. bridghami, Grt. & Rob.**

The type of this pretty and rare species was collected in this State.

H. sputatrix, Grt.

Caldwell, common—Crane.

H. suffusca, Morr.***H. apamiformis, Gn.*****H. vultuosa, Grt.****H. lignicolor, Gn.**

Caldwell, rare—Crane.

H. verbascoides, Gn.

Caldwell, rare—Crane.

***H. cariosa, Gn.**

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**H. sectilis*, Gn.

**H. vulgaris*, Grt. & Rob.

**H. remissa*, Hüb.

**H. finitima*, Gn.

**H. impulsæ*, Gn.

**H. turbulenta*, Gn.

This species I found quite abundant in Ocean county some years since.

H. miseloides, Gn.

Caldwell, rare—Crane. Newark, in June and August—Seib.

**H. modica*, Gn.

Caldwell, rare—Crane.

**H. vulvivaga*, Morr.

**H. fractilinea*, Grt.

It is rather strange that the Newark list contains so few species of *Hadena*. All of the starred species are well recorded from the State, and many of them are not at all rare.

OLIGIA, Hüb.

**O. festivoides*, Gn.

Taken not rarely at light, in Ocean county.

O. grata, Hüb.

Taken rarely. It is a southern species and common in the District of Columbia.

PERIGEA, Gn.

P. xanthioides, Gn.

Caldwell, common—Crane.

P. infelix, Gn.

Specimens are in the Newark collections.

P. luxa, Grt.

P. fabrefacta, Morr.

None of these species are really common, and *P. infelix* is rare, occurring only along the coast on a northern extension of its range, which is southward to Florida.

DIPTERYGIA, Steph.

D. scabriuscula, Linn.

Caldwall, rare—Crane. Newark, in August—Seib.

HYPPA, Dup.

H. xylinoides, Gn.

Caldwell, rare—Crane. Newark, in August—Seib.

VALERIA, Gn.

**V. grotei*, Morr.

A rare species; single specimens occurring each year in some part of the State. Not on the Newark list.

DRYOBOTA, Led.

**D. stigmata*, Grt.

ACTINOTIA, Hüb.

A. ramosula, Gn.

Caldwell, rare—Crane.

LAPHYGMA, Gn.

L. frugiperda, S. & A.

PRODENIA, Gn.

P. commelina, S. & A.

In Newark collections.

P. flavimedia, Harv.

In Newark collections.

P. lineatella, Harv.

In the Newark collections.

TRIGONOPHORA, Hüb.

T. periculosa, Gn.

Var. v-brunneum, Grt.

EUPLEXIA, Steph.

E. lucipara, Linn.

BROTOLOMIA, Led.

B. iris, Gn.

NEPHELODES, Gn.

N. minians, Gn.

Var. violans, Gn.

Caldwell, rare—Crane. This species is also sometimes quite injurious as a cut-worm. The imago flies during the day, and I have taken it in September, on *Solidago*.

TRICHOLOMIA, Grt.

T. semiaperta, Morr.

Not common. Recorded on the Newark list.

HELOTROPHA, Led.

H. reniformis, Grt.

Caldwell, rare—Crane.

APAMEA, Tr.

***A. purpuripennis, Grt.**

***A. sera, Grt. & Rob.**

A. nictitans, Bkh.

Caldwell, rare—Crane.

***A. immanis, Gn.**

Purpuripennis is rare; *sera* is more common; *nictitans* is very abundant and variable throughout the State. *Immanis* is local and not common: in the hop-growing districts of New York it is a serious pest, the larva boring into the crown roots of the Hop and eating off the vine.

GORTYNA, Hüb.

***G. rutila, Gn.**

G. harrisii, Grt.

Newark—Seib.

G. speciocissima, Grt. & Rob.

On the Newark list. I have never seen it from the State.

***G. limpida**, Gn.

Newark, in August—Seib.

G. cerussata, Grt.

Newark, in September—Seib.

G. cataphracta, Grt.

Caldwell, rare—Crane.

G. nitela, Gn.

Bores in stalks of Corn, and sometimes quite injurious.

ACHATODES, Gn.**A. zeæ**, Harris.

The larva is also a stalk borer. Rare at Caldwell—Crane.

ARZAMA, Walk.**A. obliquata**, Grt. & Rob.

Newark, in May and June—Seib.

A. diffusa, Grt.

The larvæ of both species bore in the stems of *Typha*, and the insects are of course confined to swampy localities where Cat-tails are abundant.

MACRONOCTUA, Grt.**M. onusta**, Grt.

Newark—Stortz.

EUTHISANOTIA, Grt.**E. timais**, Cram.

Rare. A southern species which occasionally finds its way northward.

SCOLECOCAMPA, Gn.**S. liburna**, Geyer.

Newark, in July—Seib.

EUCALYPTERA, Morr.***E. bipuncta**, Morr.

Found on salt marshes, where the larva probably bores into some of the reeds or grasses.

DORYODES, Gn.

D. acutaria, H.S.

Found on salt marshes.

PLATYSENTA, Grt.

P. atriciliata, Grt.

Also a swamp species, but not, I believe, confined to salt marshes. Caldwell, rare—Crane.

OMMATOSTOLA, Grt.

O. lintneri, Grt.

Anglesea, rare—Laurent.

LEUCANIA, Ochs.

L. pallens, Linn.

L. albilinea, Hüb.

Known as the "Wheat-head Army Worm" in the larva state ; sometimes quite injurious. Caldwell, common—Crane.

L. phragmatidicola, Gn.

L. adonea, Grt.

L. commoides, Gn.

L. unipuncta, Haw.

This is the parent of the "Army Worm." Common all over the State.

L. pseudargyria, Gn.

Newark, in April and June. Caldwell, rare—Crane.

UFEUS, Grt.

U. plicatus, Grt.

Newark—Seib.

CARADRINA, Tr.

**C. multifera*, Walk.

PYROPHILA, Hüb.

P. tragopogonis, Linn.

P. pyramidoides, Gn.

The larva of this species is sometimes quite abundant on Grape. Newark, in July and August—Seib.

ORTHODES, Gn.

*O. *infrma*, Gn.*O. *cynica*, Gn.*O. *enervis*, Gn.

These species are not rare—*infrma*, indeed, is quite common, though it seems to have escaped the Newark collectors.

TÆNIOCAMPA, Gn.

*T. *oviduca*, Gn.*T. *modesta*, Morr.*T. *alia*, Gn.

Newark, in April—Seib.

*T. *subterminata*, Smith.

Newark, in April—Seib.

None of these appear on the Newark list, yet all are well recorded from New Jersey.

CROCIGRAPHA, Grt.

C. *normani*, Grt.

Newark, in April—Seib.

MORRISONIA, Grt.

M. *vomerina*, Grt.

Newark, in April and May—Seib.

CALYMNIA, Hüb.

C. *orina*, Gn.

IPIMORPHA, Hüb.

I. *pleonectusa*, Grt.

ORTHOSIA, Ochs.

O. *ferrugineoides*, Gn.Var. *bicolorago*, Gn.*O. *aurantiago*, Gn.O. *disticha*, Morr.

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O. conradi, Grt.

O. helva, Grt.

Caldwell, common—Crane.

**O. lutosa*, Andrews.

GLÆA, Hüb.

**G. inulta*, Grt.

Caldwell, rare—Crane.

G. anchocelioides, Gn.

EPIGLÆA, Grt.

E. sericea, Morr.

Fort Lee—Beutenmüller.

EUCIRRÆDIA, Grt.

E. pampina, Gn.

Caldwell, common—Crane. Newark, in September—Seib.

JODIA, Hüb.

J. rufago, Hüb.

Newark, in April—Seib.

SCOLIOPTERYX, Germ.

S. libatrix, Linn.

SCOPELOSOMA, Curtis.

S. græflana, Grt.

Caldwell, rare—Crane. Newark, in April—Seib.

S. tristigmata, Grt.

S. ceromatica, Grt.

Recorded from New Jersey.

S. devia, Grt.

Newark, in April—Seib.

S. sidus, Gn.

Var. walkeri, Grt.

Newark, in April—Seib.

XYLINA, Ochs.**X. petulca**, Grt.

Caldwell, rare—Crane.

X. ferrealis, Grt.

New Brunswick, in April—Smith.

X. bethunei, Grt. & Rob.**X. fagina**, Morr.**X. antennata**, Walk.

Caldwell, rare—Crane. Newark, in September—Seib.

***X. laticinerea**, Grt.**X. cinerosa**, Grt.**X. unimoda**, Lint.**X. thaxteri**, Grt.

Newark—Seib.

CALOCAMPA, Steph.**O. nupera**, Lint.**O. cineritia**, Grt.***O. curvimacula**, Morr.**CUCULLIA, Schr.****C. convexipennis**, Grt. & Rob.

Caldwell, rare—Crane.

C. asteroides, Gn.**C. intermedia**, Speyer.

The handsome larvæ of this genus are sometimes seen on Golden Rod.

CRAMBODES, Gn.***C. talidiformis**, Gn.

Favors swampy meadows.

NOLOPHANA, Grt.**N. malana**, Fitch.

Caldwell, common—Crane. Newark, in May—Seib.

**N. zelleri*, Grt.

Newark, in May—Seib.

These two species are quite frequently confused, and this may account for its absence from the Newark list, though Mr. Seib has taken it there.

ANOMIS, Hüb.

A. erosa, Hüb.

Really a southern species, but found northwardly each year.

ALETIA, Hüb.

A. argillacea, Hüb.

The famous cotton moth. It does not breed in this State, so far as has been observed, but is found in considerable numbers almost every year, the imago emigrating from the South.

MARASMALUS, Grt.

**M. ventilator*, Grt.

**M. histrio*, Grt.

Caldwell, common—Crane.

I have seen both of these handsome species from the State, but the Newark collectors seem not to have run across them as yet.

INGURA, Gn.

I. abrostoloides, Gn.

I. delineata, Gn.

**I. oculatrix*, Gn.

Caldwell, common—Crane.

The last-named is really the most common everywhere, but is not generally recognized as an *Ingura*.

CALPE, Tr.

C. canadensis, Beth.

PLUSIODONTA, Gn.

**P. compressipalpis*, Gn.

One of our most beautiful species, and rare. It is rather more common to the north, and has not yet turned up near Newark.

PHIPROSOPUS, Grt.

P. callitrichoides, Grt.

HYPSOROPHA, Hüb.

**H. hormos*, Hüb.

Newark—Machesney. Taken in Ocean county; also near Jersey City.

TELESILLA, H-S.

T. cinereola, Gn.

Caldwell, common—Crane.

ABROSTOLA, Ochs.

A. ovalis, Gn.

Newark—Seib.

**A. urentis*, Gn.

I have collected this species on Long Island, and I have seen it from the vicinity of Philadelphia. It is certain to occur in New Jersey.

PLUSIA, Fabr.

P. ærea, Hüb.

Caldwell, common—Crane.

P. æreoides, Grt.

P. contexta, Grt.

Caldwell, rare—Crane.

P. putnami, Grt.

P. formosa, Grt.

Rare near Newark.

**P. verruca*, Fabr.

This handsome form has been taken not rarely, near Greenville, by Mr. Loitloff. Newark, in May—Seib.

P. precatationis, Gn.

Newark, in September—Seib.

P. laticlavata, Morr.

Newark, in October—Seib.

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P. brassicæ, Riley.

Sometimes quite injurious to Cabbages, in the larva state.

P. mortuorum, Gn.

Rare. Taken near Newark.

P. simplex, Gn.

Newark, in October—Seib. Caldwell, rare—Crane.

PLAGIOMIMICUS, Grt.

P. pitychromus, Grt.

SOHINIA, Hüb.

S. trifascia, Hüb.

Caldwell, rare—Crane.

S. nundina, Dru.

Taken on *Spiræa*, near Jamesburg. Also on the Newark list.

S. spinosæ, Gn.

Sandy Hook—Beutenmüller.

ANTHÆCIA, Gn.

A. rivulosa, Gn.

A. lynx, Gn.

I have seen specimens in collections. One near Newark.

RHODOPHORA, Gn.

R. florida, Gn.

The larva feeds in the buds and seed capsules of *Enothera*.

PYRRHIA, Hüb.

P. umbra, Hüb.

Caldwell, rare—Crane. Newark, in June—Seib.

DERRIMA, Walk.

D. henrietta, Grt.

HELIOTHIS, Hüb.

H. armiger, Hüb.

The larva is the cotton-boll worm of the South, the corn worm of the North, and it varies its diet on occasions by eating into Tomatoes.

CIRRHOPHANUS, Grt.**C. triangulifer, Grt.**Caldwell, rare—Crane. Newark—Hampsen. Philadelphia
—Laurent.**TARACHE, Hüb.****T. aprica, Hüb.****T. erastrioides, Gn.*****T. candefacta, Hüb.****T. delecta, Walk.****THALPOOHARES, Led.****T. patula, Morr.****LITHACODIA, Hüb.****L. bellicula, Hüb.****CHAMYRIS, Gn.****C. cerintha, Tr.**

Caldwell, rare—Crane. Newark, in June—Seib.

EUSTROTIA, Hüb.**E. concinnimacula, Gn.**

Caldwell, rare—Crane.

E. synochitis, Grt. & Rob.*E. musta, Grt. & Rob.****E. muscosula, Gn.**

Caldwell, common—Crane.

E. carneola, Gn.

Caldwell, rare—Crane.

E. apicosa, Harv.

Caldwell, common—Crane. Newark, in July—Seib.

HERRICHIA, Grt.**H. mollissima, Gn.*****H. monetifera, Gn.**

I have taken this in Ocean county. Newark—Seib.

SPRAGUEIA, Grt.

**S. onagrus*, Gn.

A pretty little species, apparently rare here.

XANTHOPTERA, Gn.

**X. nigrofimbria*, Gn.

X. semiflava, Gn.

EXYRA, Grt.

E. semicrocea, Gn.

PROTHYMIA, Hüb.

P. coccineifascia, Grt.

**P. rosalba*, Grt.

METOPONIA, Dup.

M. obtusa, H-S.

Caldwell, common—Crane.

GALGULA, Gn.

**G. hepara*, Gn.

**G. subpartita*, Morr.

DRASTERIA, Hüb.

D. erechtea, Cram.

Caldwell, common—Crane. Newark, in April—Seib.

EUCLIDIA, Hüb.

E. cuspea, Hüb.

SYNEDA, Gn.

S. graphica, Hüb.

Sandy Hook—Seib. Ocean county, in May—Smith.

S. jucunda, Hüb.

CATOCALA, Schrank.

As this is a favorite genus with collectors, the list is large, and perhaps fairly complete. All are on the Newark list, and I imagine but few species will be added to it. All the species are quite gener-

ally distributed, though each locality differs somewhat in the make-up of its fauna, and species rare in one district will be common in others.

O. epione, Dru.

O. lacrymosa, Gn.

O. viduata, Gn.

O. desperata, Gn.

Caldwell, common—Crane.

O. resecta, Grt.

Caldwell, common—Crane.

O. flebilis, Gr.

Caldwell, rare—Crane.

O. robinsonii, Gr.

Caldwell, rare—Crane.

O. obscura, Strk.

Caldwell, rare—Crane.

O. insolabilis, Gn.

Caldwell, rare—Crane.

O. angusi, Grt.

O. residua, Grt.

O. tristis, Edw.

Caldwell, rare—Crane.

O. relictæ, Walk.

Var. phrynia, Hy. Edw.

O. amatrîx, Hüb.

Caldwell, rare—Crane.

O. cara, Gn.

Caldwell, common—Crane. Newark, in July—Seib.

O. concumbens, Walk.

Caldwell, common—Crane. Newark, in August—Seib.

O. unijuga, Walk.

Newark, in August and September—Seib.

O. briseis, Edw.

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O. faustina, Strk.

Caldwell, rare—Crane.

O. parta, Gn.

O. coccinata, Grt.

O. verrilliana, Grt.

O. ultronia, Hüb.

Caldwell, common—Crane. Newark, in August—Seib.

O. marmorata, Edw.

O. ilia, Cram.

Caldwell, common—Crane. Newark, in July—Seib.

O. innubens, Gn.

O. cerogama, Gn.

Var. bunkerii, Grt.

Caldwell, rare—Crane.

O. neogama, S. & A.

Caldwell, common—Crane.

O. subnata, Grt.

Caldwell, rare—Crane.

O. piatrix, Grt.

Caldwell, common—Crane. Newark, in August—Seib.

O. paleogama, Gn.

Caldwell, rare—Crane. Newark, in August and September—Seib.

Var. phalanga, Grt.

O. habilis, Grt.

Var. basilis, Grt.

O. nebulosa, Edw.

O. muliercula, Gn.

O. consors, Gn.

O. antinympa, Hüb.

Caldwell, common—Crane.

O. badia, Grt. & Rob.

O. serena, Edw.

Caldwell, rare—Crane.

O. polygama, Gn.

Caldwell, rare—Crane.

O. pretiosa, Lint.

O. similis, Edw.

O. praeclara, Grt. & Rob.

Caldwell, common—Crane.

O. grynea, Cram.

Caldwell, common—Crane. Newark, in July—Seib.

O. gracilis, Edw.

Newark, in August—Seib.

O. minuta, Edw.

Var. parvula, Edw.

O. amica, Hüb.

Var. lineella, Grt.

Caldwell, common—Crane.

ALLOTRIA, Hüb.

A. elonympha, Hüb.

Caldwell, rare—Crane.

PARTHENOS, Hüb.

P. nubilis, Hüb.

Caldwell, rare—Crane. Newark, in June—Seib.

PHOBERIA, Hüb.

P. atomaris, Hüb.

PSEUDOLIMACODES, Grt.

P. littera, Gn.

Newark—Hampsen.

OELIPTERA, Gn.

O. frustulum, Gn.

Caldwell, common—Crane.

PARALLELIA, Hüb.

P. bistriaris, Hüb.

Caldwell, common—Crane. Newark, in May and June—Seib.

AGNOMONIA, Hüb.

A. anilis, Dru.

PANOPODA, Gn.

P. carneicosta, Gn.

P. rufimargo, Hüb.

Caldwell, rare—Crane. Newark, in June—Seib.

Var. roseicosta, Gn.

PLEONECTYPTERA, Grt.

P. geometralis, Grt.

REMIGIA, Gn.

**R. latipes*, Gn.

POAPHILA, Gn.

P. quadriflaria, Hüb.

TRAMA, Harv.

T. arrosa, Harv.

EREBUS, Latr.

E. odora, Linn.

ZALE, Hüb.

Z. horrida, Hüb.

Caldwell, common—Crane.

PHEOCYMA, Hüb.

**P. lunifera*, Hüb.

HOMOPTERA, Boisd.

H. edusa, Dru.

Newark, in July—Seib.

Var. saundersii, Beth.

Var. lunata, Dru.

Caldwell, common—Crane. Newark, in September—Seib.

Var. nigricans, Beth.

H. unilineata, Grt.

H. obliqua, Gn.

YPSIA, Gn.

- Y. undularis*, Dru.
Var. æruginosa, Gn.
Var. umbripennis, Grt.

PSEUDANTHRÆCIA, Grt.

- P. coracias*, Gn.

HOMOPYRALIS, Grt.

- H. tactus*, Grt.
 Caldwell, common—Crane.

SPARGOLOMA, Grt.

- S. umbrifascia*, Grt.

PANGRAPTA, Hüb.

- P. decoralis*, Hüb.

PSEUDAGLOSSA, Grt.

- P. lubricalis*, Gey.
 Caldwell, common—Crane.
**P. scobialis*, Grt.

EPIZEUXIS, Hüb.

- E. æmula*, Hüb.
 Caldwell—Crane. The larva of this species is said to feed on dry, dead leaves.
E. americalis, Gn.
 Caldwell—Crane. The larva of this species lives in ants' nests. Food as yet not positively known.

MEGACHYTA, Grt.

- *M. lituralis*, Hüb.

LITOGNATHA, Grt.

- *L. nubilifascia*, Grt.

CHYTOLITA, Grt.

- C. morbidalis*, Gn.
C. petrealis, Grt.

ZANCLOGNATHA, Led.

**Z. lævigata*, Grt.

**Z. ochreipennis*, Grt.

RIVULA, Gn.

R. propinqualis, Gn.

PALTHIS, Hüb.

P. angulalis, Hüb.

Caldwell—Crane.

**P. asopialis*, Gn.

PHALÆNOPHANA, Grt.

**P. rurigena*, Grt.

RENIA, Gn.

**R. discoloralis*, Gn.

**R. brevirostralis*, Grt.

**R. flavipunctalis*, Geyer.

BLEPTINA, Gn.

B. caradrinalis, Gn.

HYPENULA, Grt.

H. opacalis, Grt.

HYPENA, Fabr.

**H. baltimoralis*, Gn.

Caldwell—Crane. Newark—Seib.

**H. bijugalis*, Walk.

**H. manalis*, Walk.

**H. abalienalis*, Walk.

**H. toreuta*, Grt.

**H. scabra*, Fabr.

Common everywhere in the State.

H. humuli, Harr.

Caldwell, common—Crane.

Family GEOMETRIDÆ.*

CHCERODES, Gn.

C. clemitaria, S. & A.

Caldwell, common—Crane.

C. transversata, Dru.

A generally distributed and rather common species.

C. furciferata, Pack.

TETRAOIS, Gn.

T. crocallata, Gn.

Caldwell, common—Crane.

T. lorata, Grt.

Caldwell, rare—Crane.

METANEMA, Gn.

M. quercivoraria, Gn.

M. inatomaria, Gn.

M. carnaria, Pack.

Caldwell, rare—Crane.

DREPANODES, Gn.

D. puber, Grt. & Rob.

D. varus, Grt. & Rob.

Found, not rarely, in pine woods.

D. hortularia, Hulst.

CABERODES, Gn.

C. confusaria, Hüb.

Occurs everywhere and in the greatest variety, though scarcely abundant.

C. majoraria, Gn.

Caldwell, rare—Crane.

*The material for the list in this family was furnished by Rev. Geo. D. Hulst, of Brooklyn, N. Y., who has made it a special study. It includes the list made by the Newark Society, and the whole is given without distinction by Mr. Hulst, as to source. All comments are my own, and from my own experience, except where otherwise stated.

ENNOMOS, Tr.

E. alniaria, Linn.

Sometimes quite common locally.

EUDALIMIA, Hüb.

E. subsignaria, Hüb.

Caldwell, common—Crane.

SELENIA, Hüb.

S. kentaria, Grt. & Rob.

S. alciphearia, Walk.

AZELINA, Gn.

A. hubnerata, Gn.

Caldwell, rare—Crane.

ENDROPIA, Gn.

E. serrataria, Dru.

Caldwell, rare—Crane.

E. obtusaria, Hüb.

E. effectaria, Walk.

E. pectinaria, W. V.

E. bilinearia, Pack.

Caldwell, rare—Crane.

E. armataria, H-S.

E. amœnaria, Gn.

Caldwell, common—Crane.

E. madusaria, Walk.

Caldwell, rare—Crane.

E. marginata, Minot.

E. warneri, Harv.

E. hypochraria, H-S.

Caldwell, common—Crane.

E. duaria, Gn.

Caldwell, rare—Crane.

E. decoloraria, Hulst.

EPIRRANTHIS, Hüb.**E. obfirmaria, Hüb.**

Caldwell, rare—Crane.

THERINA, Hüb.**T. fervidaria, Hüb.**

I have taken this at Jamesburg. Caldwell, rare—Crane.

T. endropiaria, Grt. & Rob.**T. bibularia, Grt. & Rob.****METROCAMPA, Gn.****M. margaritata, Linn.****ANAGOGA, Hüb.****A. pulveraria, Linn.****ANTEPIONE, Pack.****A. depontanata, Grt.**

Caldwell, rare—Crane.

A. sulphurata, Pack.

Caldwell, rare—Crane.

SIOYA, Gn.**S. macularia, Harr.****ANGERONA, Dup.****A. crocataria, Fabr.**

Caldwell, common—Crane.

NEMATOCAMPA, Gn.**N. filamentaria, Gn.**

Not uncommon throughout the State.

PLAGODIS, Hüb.**P. rosaria, Grt. & Rob.****P. floscularia, Grt.****P. keutzingaria, Grt.**

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P. fervidaria, H-S.

P. phlogosaria, Gn.

P. alcoolaria, Gn.

HYPERETIS, Gn.

H. amicaria, H-S.

A common and extremely variable species found throughout the State.

GEOMETRA, Linn.

G. iridaria, Gn.

Not common, but seems generally distributed.

APLODES, Gn.

A. rubrolinearia, Pack.

A. brunnearia, Pack.

A. mimosaria, Gn.

Caldwell, rare—Crane.

SYNOHLORA, Gn.

S. glaucaria, Gn.

NEMORIA, Hüb.

N. subcroceata, Walk.

Caldwell, rare—Crane.

N. gratata, Walk.

N. pistaciata, Gn.

Caldwell, rare—Crane.

EUOROSTIS, Hüb.

E. chlproleucaria, Gn.

Caldwell, common—Crane.

DYSPTERIS, H-S.

D. abortivaria, H-S.

Caldwell, rare—Crane.

EPHYRA, Dup.

E. pendulinearia, Gn.

Caldwell, rare—Crane.

ACIDALIA, Tr.**A. ossularia**, Hüb.**A. granitaria**, Pack.**A. insularia**, Gn.**A. nivosata**, Gn.

Caldwell, rare—Crane.

A. inductata, Gn.**A. punctofimbriata**, Pack.

Caldwell, rare—Crane.

A. cacuminata, Morr.**A. enucleata**, Gn.

One of the most common species of the genus; usually among Fern and Bracken, in woods.

ASTHENA, Hüb.**A. albogilvaria**, Morr.**CALOTHYSANIS, Hüb.****C. amaturaria**, Walk.

Caldwell, rare—Crane.

CALLEDAPTERYX, Grt.**C. dryopterata**, Grt.**STEGANIA, Gn.****S. pustularia**, Gn.

Caldwell, common—Crane.

GUENERIA, Pack.**G. basiata**, Walk.**DEILINEA, Hüb.****D. variolaria**, Gn.**D. erythemaria**, Gn.**EUDEILINEA, Pack.****E. herminiata**, Gn.

CORYOIA, Dup.

- C. vestaliata*, Gn.
Caldwell, rare—Crane.
C. semiclarata, Walk.

SEMIOTHISA, Hüb.

- S. præatomata*, Harv.
S. minorata, Pack.
S. enotata, Gn.
S. granitata, Gn.
S. ocellinata, Gn.

PHASIANE, Dup.

- P. orillata*, Walk.
P. mellistrigata, Grt.

MARMOPTERYX, Pack.

- M. strigularia*, Min.

THAMNONOMA, Led.

- T. quadrilineararia*, Pack.
T. wavaria, Linn.
T. subcessaria, Pack.
T. sulphuraria, Pack.
T. argillacearia, Pack.

LOZOGRAMMA, Steph.

- L. lactispargata*, Walk.
L. deterrenta, Gn.
L. defluata, Walk.

EUFITCHIA, Pack.

- E. ribearia*, Fitch.
The gooseberry span worm; sometimes common. Caldwell,
rare—Crane.

OARIPETA, Walk.**O. divisata**, Walk.

Caldwell, rare—Crane.

O. angustiorata, Walk.**FIDONIA, Tr.****F. truncataria**, Walk.**F. notataria**, Walk.**HÆMATOPIS, Hüb.****H. grataria**, Fabr.

Common throughout the State. Newark, in May—Seib.

CATERVA, Grt.**C. catenaria**, Dru.

Locally common. Not rare at Jamesburg. Caldwell, common—Crane.

TORNOS, Morr.**T. rubiginosus**, Morr.**T. approximaria**, Pack.**ASPILATES, Tr.****A. lintneraria**, Pack.**A. coloraria**, Fabr.**CLEORA, Curtis.****C. pulchraria**, Minot.**HEMEROPHILA, Steph.****H. unitaria**, H-S.

Caldwell, rare—Crane. Newark—Machesney.

EPIMECIS, Hüb.**E. hortaria**, Fabr.**CYMATOPHORA, Hüb.****C. umbrosaria**, Hüb.**C. polygrammaria**, Pack.

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C. larvaria, Gn.

Caldwell, rare—Crane.

C. humaria, Gn.

Caldwell, rare—Crane.

C. pampinaria, Gn.

Caldwell, common—Crane.

C. crepuscularia, Tr.

Quite common throughout the State.

TEPHROSIA, Bd.

T. canadaria, Gn.

Caldwell, rare—Crane.

T. cognataria, Hüb.

T. cribrataria, Gn.

Caldwell, rare—Crane.

PARAPHIA, Gn.

P. subatomaria, Gn.

Caldwell, rare—Crane.

EUBYJA, Hüb.

E. cognataria, Gn.

E. pænulataria, Grt.

HYBERNIA, Latr.

H. tiliaria, Harris.

Caldwell, rare—Crane.

PHIGALIA, Dup.

P. strigataria, Minot.

P. olivacearia, Morr.

ANISOPTERYX, Steph.

A. vernata, Harris.

The spring canker worm. Seldom injurious in this State.

A. autumnata, Pack.

Also quite rare in my experience.

OPEROPHTERA, Hüb.

O. boreata, Hüb.

HETEROPHLEPS, H-S.

H. harveiata, Pack.

H. triguttata, H-S.

A common species throughout the State.

HELIOMATA, Grt.

H. cycladata, Grt.

BAPTRIA, Hüb.

B. albovittata, Gn.

LOBOPHORA, Curtis.

L. atroliturata, Walk.

L. anguilineata, Grt.

L. fuscifasciata, Walk.

HYDRIA, Hüb.

H. undulata, Linn.

PHIBALAPTERYX, Steph.

P. latirupta, Walk.

Caldwell, common—Crane.

P. intestinata, Gn.

OOHRIA, Hüb.

O. ferrugata, Linn.

O. munitata, Hüb.

PETROPHORA, Hüb.

P. diversilineata, Hüb.

Caldwell, common—Crane.

P. prunata, Linn.

EPIRRITA, Hüb.

E. cambricaria, Curt.

E. dilutata, Borkh.

E. duodecimlineata, Pack.

PLEMYRIA, Hüb.

P. fluviata, Hüb.

P. multiferata, Walk.

GLAUOPTERYX, Hüb.

G. cumatilis, Grt. & Rob.

G. cæsiata, Borkh.

EUPETHECIA, Curtis.

E. miserulata, Grt.

E. interruptofasciata, Pack.

Family PYRALIDÆ.*

Sub-Family PYRALINÆ.

AGLOSSA, Latr.

A. domalis, Gn.

ASOPIA, Tr.

A. farinalis, Linn.

Often injurious to stored grain, and quite common.

A. costalis, Fabr.

The clover clay worm. Quite common throughout the State.

A. olinalis, Gn.

A. squamealis, Grt.

*Mr. Hulst has also kindly furnished the list of species in this family, of some parts of which he has made special study. No other lists have been available, and Mr. Hulst must be considered sole authority for all the species cited, except where I have especially indicated another. The comments are, in all cases, my own.

SIPAROCERA, Rob.

S. nobilis, Rob.

I have taken this rarely, in Ocean county.

MELANOMMA, Grt.

M. auricinctaria, Grt.

SCOPARIA, Haw.

S. centuriella, S. V.*S. libella*, Grt.

THELCTERIA, Led.

T. pupula, Hüb.

I have seen this pretty species, not uncommonly.

BOTIS, Schrank.

B. octomaculata, Linn.*B. inaequalis*, Gn.*B. rufofimbrialis*, Grt.*B. harveyana*, Grt.*B. badipennis*, Grt.*B. fodinalis*, Led.*B. nelumbialis*, Smith.Bordentown. The larva bores in stems, &c., of the Egyptian
Lotus—Smith.*B. erectalis*, Grt.*B. flavidalis*, Gn.*B. oxydalis*, Gn.*B. langdonalis*, Grt.*B. citrina*, Grt. & Rob.*B. marculenta*, Grt. & Rob.

New Brunswick—Smith.

B. opilalis, Grt.*B. oscitalis*, Grt.

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B. pertextalis, Led.

B. gentilis, Grt.

B. magistralis, Grt.

B. quinquelinealis, Grt.

B. feudalalis, Grt.

New Brunswick, Jamesburg—Smith.

B. terrealis, Tr.

B. illibalis, Hüb.

B. plectilis, Grt. & Rob.

B. subolivalis, Pack.

B. niveicilialis, Grt.

B. ventralis, Grt.

EURYCREON, Led.

E. sticticalis, Linn.

E. cereralis, Zell.

Ocean county, May 20th—Smith.

E. chortalis, Grt.

Ocean county, May 20th—Smith.

E. rantalis, Gn.

I have found this quite common, yet not injurious.

NOMOPHILA, Hüb.

N. noctuella, S. V.

Common everywhere throughout the State.

MESOGRAPHE, Hüb.

M. rimosalis, Gn.

M. stramentalis, Hüb.

CROCIDOPHORA, Led.

C. tuberculalis, Led.

C. serratissimalis, Zell.

PANTOGRAPHIA, Led.

P. limata, Grt. & Rob.

BLEPHAROMASTIX, Led.**B. ranalis, Gn.**

Newark, at light—Smith.

EUDIOPTUS, Hüb.**E. hyalinata, Linn.**

A pretty species, not uncommon in Ocean county.

DESMIA, Westw.**D. maculalis, Westw.****CINDAPHIA, Led.****O. bicoloralis, Gn.**

Not uncommon at light, at New Brunswick.

CONCHYLODES, Gn.**O. platinalis, Gn.**

Sub-Family HYDROCAMPINÆ.**OLIGOSTIGMA, Gn.****O. albalis, Rob.****HYDROCAMPA, Gn.****H. genuinalis, Led.**

Not uncommon along ditches of running water, in Ocean county.

CATACLYSTA, Hüb.**O. bifascialis, Rob.****NYMPHÆELLA, Grt.****N. dispar, Grt.**

Sub-Family HOMOPHYSINÆ.

- LIPOCOSMA**, Led.
L. sicalis, Walk.
HOMOPHYSA, Gn.
H. glaphyralis, Gn.
H. sesquistrialis, Hüb.
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Sub-Family EPIPASCHINÆ.

- EPIPASCHIA**, Clem.
E. superatalis, Clem.
LANTAPHE, Clem.
L. platanella, Clem.
SALUDA, Hulst.
S. asperatella, Clem.
S. diluculella, Grt.
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Sub-Family PHYCITINÆ.

- ACROBASIS**, Zell.
A. angusella, Grt.
A. caryæ, Grt.
 Quite common on Hickory, in Ocean county.
A. rubrifasciella, Pack.
A. vaccinii, Riley.
 The "Cranberry Fruit Worm." Found on all the bogs, but
 in small numbers, and never seriously injurious.
A. indiginella, Zell.
 Common at New Brunswick.
DIORYCTRIA, Zell.
D. abietella, S. V.

N. ovalis, Pack. **NEPHOPTERYX**, Hüb.

N. basilaris, Zell.

M. pravella, Grt. **MEROPTERA**, Grote.

S. fusca, Haw. **SALEBRIA**, Zell.

Z. grossulariæ, Pack. **ZOPHODIA**, Hüb.

E. semifuneralis, Walk. **EUZOPHORA**, Zell.

V. edmandsii, Pack. **VITULA**, Rag.

P. pneumatella, Hulst. **PSOROSA**, Zell.
Common at New Brunswick, larva on Elm—Smith.

H. oblitella, Zell. **HETEROGRAPHIS**, Rag.

E. elutella, Hüb. **EPHESTIA**, Hüb.

P. interpunctella, Hüb. **PLODIA**, Gn.
Often injurious to grain, the larva eating out the kernel.

P. hæmatica, Zell. **PEORIA**, Rag.

Sub-Family GALLERIINÆ.

G. mellonella, Linn. **GALLERIA**, Linn.

The "Bee Moth." Larva infesting bee-hives, and sometimes very injurious.

APHOMIA, Hüb.
A. sociella, Linn.

ACHRCEA, Hüb.
A. grisella, Fabr.

Sub-Family CRAMBIDINÆ.

✓ **ARGYRIA**, Hüb.
A. nivalis, Dru.
 Found throughout the State. Hardly rare.

A. nummulalis, Hüb.

A. pulchella, Walk.

✓ *Chilo de nocturnis*

CRAMBUS, Fabr.

✓ **C. girardellus**, Clem.

C. sericinellus, Zell.

C. præfectellus, Zinck.

✓ **C. leachellus**, Zinck.

✓ **C. agitatellus**, Clem.

C. saltuellus, Zell.

Ocean county, on cranberry bogs—Smith.

✓ **C. albellus**, Clem.

Newark, Jamesburg—Smith.

C. bipunctellus, Zell.

✓ **C. laqueatellus**, Clem.

Ocean county, in May—Smith.

✓ **C. topiarius**, Zell.

Ocean county, on cranberry bogs, in May—Smith.

C. plejadellus, Zinck.

✓ **C. teterellus**, Zinck.

✓ **C. elegans**, Clem.

C. exsiccatus, Zell.

✓ **C. caliginosellus**, Clem.

✓ **C. vulvivagellus**, Clem.

✓ *C. ...*

✓ *C. ...*

SCHÆNOBIUS, Dup.

S. melinellus, Rob.

S. clemensellus, Rob.

Family TORTRICIDÆ.

In this family I have been unable to get at any collections made in New Jersey. The few species taken by myself form only a small part of the Tortricid fauna, and none of the local collectors to whose collections I had access, collected the family. I have therefore included in this list such species of Prof. Fernald's Catalogue of *Tortricidæ* as, from the distribution given, are likely to occur in this State. Where I have taken the species myself, I have, of course, indicated it.

TERAS, Tr.

T. subnivana, Walk.

Recorded from New York and Pennsylvania.

T. scabrana, Curt.

I have taken this near Jersey City.

T. hastiana, Linn.

Occurs all over the United States and Europe.

T. permutana, Dup.

Extends across the continent, but not recorded from New Jersey.

T. ferrugana, Schiff.

I have taken this near New Brunswick, and it is probably generally distributed in the State.

T. minuta, Rob. (*vacciniivorana*, Pack.)

This is the "Fire Worm," or "Old Vine Worm," so destructive on cranberry bogs.

T. oxycoccana, Pack.

Also said to be a Cranberry feeder. This name has usually been used to represent the preceding species.

OACÆCIA, Hüb.

C. rosaceana, Harris.

Common throughout the State. Often injurious to Roses.

C. purpurana, Clem.

I have seen this, taken in the State.

C. cerasivorana, Fitch.

Not rare. Generally distributed.

C. parallela, Rob.

Recorded from New York and Pennsylvania.

C. obsoletana, Walk.

C. transiturana, Walk.

Both of these are from New York and Pennsylvania.

C. argyropila, Walk.

Recorded from the Atlantic to the Pacific.

C. semiferana, Walk.

I have seen the larva quite abundant on Oak, in Burlington county. I have not seen it near New Brunswick.

C. fervidana, Clem.

Recorded from New York and Pennsylvania.

C. fractivittana, Clem.

Recorded from Massachusetts to Virginia, to Ohio and Illinois.

LOXOTÆNIA, Steph.

L. afflictana, Walk.

I have taken several specimens in Ocean county.

PTYCHOLOMA, Steph.

P. persicana, Fitch.

Not rare. Generally distributed.

P. melaleucana, Walk.

I have taken this near Montclair.

PANDEMIS, Hüb.

P. lamprosana, Rob.

Recorded from New York and Pennsylvania.

LOPHODERUS, Steph.**L. juglandana**, Fern.

Not uncommon in Ocean county.

L. triferana, Walk.

Recorded from Maine to Texas. Dr. Packard gives Cranberry as a food-plant, but I have not found it on New Jersey bogs.

L. politana, Haw.

Recorded from Maine to District of Columbia.

L. velutinana, Walk.

New Brunswick, in April; common.

TORTRIX, Linn.**T. pallorana**, Rob.

Not common. I have taken only a few specimens.

T. albicomana, Clem.

I have taken this, not rarely, in Ocean county.

T. peritana, Clem.

Recorded from New York and Pennsylvania.

T. fumiferana, Clem.

I have taken this in the Orange Mountains.

AMORBIA, Clem.**A. humerosana**, Clem.

Recorded from New York and Pennsylvania.

CENECTRA, Gn.**Ce. unifasciana**, Clem.

Recorded from New York and Pennsylvania.

Ce. xanthoides, Walk.

Recorded along the coast from Maine to Virginia.

CENOPIS, Zell.**C. reticulatana**, Clem.

Not rare near Jersey City.

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C. cana, Rob.

Recorded from New York and Pennsylvania.

DICHELIA, Gn.

D. sulfureana, Clem.

Not rare. Generally distributed in my experience.

AMPHISA, Curt.

A. discopunctana, Clem.

Recorded from New York and Pennsylvania.

CAPUA, Steph.

C. furcatana, Walk.

Recorded from New York and Pennsylvania.

PLATYNOTA, Clem.

P. flavedana, Clem.

I have taken this in the State, but forget exactly where.

P. sentana, Clem.

New Brunswick; not common.

CONOCHYLIS, Treits.

C. rutilana, Hüb.

I have received this from the western part of the State, as injurious to Trailing Juniper.

C. dorsimaculana, Rob.

I have taken this in Ocean, Middlesex and Monmouth counties, not rarely.

RETINIA, Gn.

R. frustrana, Comst.

I have taken this rarely in Ocean county.

EUDEMIS, Hüb.

E. botrana, Schiff.

Not rare along the base of the Orange Mountains.

ECCOPSIS, Zell.**E. permundana**, Clem.

I have seen no New Jersey specimens, but feel confident it will be found in the State.

E. fasciatana, Clem.**E. inornatana**, Clem.

Both of these are recorded from New York and Pennsylvania.

PENTHINA, Treits.**P. nimbatana**, Clem.

Recorded from New York and Pennsylvania.

P. hartmanniana, Linn.

Newark ; specimens taken by me.

P. hebesana, Walk.

Recorded from New Jersey, by Fernald.

P. chionosema, Zell.

New Brunswick ; not common.

SERRICORIS, Tr.**S. auricapitana**, Wlsm.

Recorded from New York and Pennsylvania.

S. coruscana, Clem.

I have taken this not rarely near Jersey City.

S. instrutana, Clem.

Recorded from New York and Pennsylvania.

PHÆCASIOPHORA, Grt.**P. confixana**, Walk.

Recorded from New York and Pennsylvania.

PÆDISCA, Tr.**P. juncticiliana**, Wlsm.

Recorded from New York to California.

P. abbreviatana, Wlsm.

Recorded from New York and Pennsylvania.

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P. strenuana, Walk.

New Brunswick ; not common.

P. scudderiana, Clem.

I have seen the work of this species on *Solidago*, in Ocean and Atlantic counties.

P. dorsisignatana, Clem.

I have taken this near Montclair and in Ocean county, not uncommonly.

SEMASIA, Steph.

S. formosana, Clem.

I have taken this in Ocean county, May 20th.

S. striatana, Clem.

Recorded from New York and Pennsylvania.

S. signatana, Clem.

Recorded from Maine to Virginia.

S. argutana, Clem.

Recorded from Massachusetts to Texas.

PROTEOPTERYX, Wlsm.

P. spoliata, Clem.

New Brunswick, in April ; common.

STEGANOPTYCHA, Steph.

S. fasciolana, Clem.

Recorded from New York and Pennsylvania.

TMETOCERA, Lederer.

T. ocellana, Schiff.

Not rare. Generally distributed in the State.

RHOPOBOTA, Lederer.

R. vacciniana, Pack.

Very injurious to Cranberries, and found wherever this fruit is grown.

PHOXOPTERIS, Treits.

P. nubeculana, Clem.

I have this from several parts of the State, and it seems not rare. Ocean county, May 20th.

P. comptana, Fröhl.

Widely distributed, but not recorded from New Jersey.

P. cornifolia, Riley.

New Brunswick; rare.

GRAPHOLITA, Treits.

G. caryana, Fitch.

I have seen what I take to be the work of this species, in Ocean county.

G. interstictana, Clem.

Recorded from New York and Pennsylvania.

CARPOCAPSA, Treits.

C. pomonella, Linn.

The codling moth. Common all over the State.

DICHRORAMPHA, Gn.

D. simulana, Clem.

Recorded from New York and Pennsylvania.

Family TINEIDÆ.

The list in this family, or rather aggregation of families, has been kindly furnished by Mr. Wm. Beutenmüller, the Curator of Insects in the American Museum of Natural History, New York City.

Mr. Beutenmüller says "The list has been made up from personal observation, and not from published records; in fact, no species of *Tineidæ*, to my knowledge, have as yet been recorded from New Jersey." Small as is the list, the accuracy of the record and the

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notes on the food plants are very valuable. I have made few additions to or comments in the list, and it is to be credited in its entirety to Mr. Beutenmüller.

CHOREUTES, Hüb.

C. pavonicella, Clem.

Rare. Food-plant and early stages unknown.

ACROLOPHUS, Poey.

A. plumifrontella, Clem.

Common. Food-plant and early stages unknown.

PSEUDANOPHORA, Wlsm.

P. arcanella, Clem.

Common. Food and early stages unknown.

AMADRYA, Clem.

A. effrenatella, Clem.

Not common.

TINEA, Linn.

T. biselliella, Hum.

Common. Larva very injurious to carpets, furs, woolens, &c.

T. pellionella, Linn.

Common. Larva very injurious to furs, carpets, woolens, &c.

T. granella, Linn.

Common. Larva injurious to grain.

BLABOPHANES, Zell.

B. ferruginella, Hüb.

Common. Early stages and food unknown.

B. dorsistrigella, Clem.

Common. Early stages and food unknown.

HYPONEUMEUTA, Zell.

H. multipunctella, Clem.

Not common. Early stages and food unknown.

PRONUBA, Riley.

P. yuccasella, Riley.

Common. Larva infests the seed pods of *Yucca*.

PLUTELLA, Schr.

P. cruciferarum, Zell.

Common. Larva injurious to Cabbage.

EPIGRAPHIA, Steph.

E. packardella, Clem.

Rare. Early stages and food unknown.

CRYPTOLECHIA, Zell.

C. contrariella, Walk.

Not common. Early stages and food unknown.

C. tentoriferella, Clem.

Common. Larva in web on Oak, Cherry and Walnut.

C. schlægeri, Zell.

Common. Food, Wax Myrtle (*Myrica*) and Oak.

C. quercicella, Clem.

Not common. Food, Oak, Aspen.

DEPRESSARIA, Haw.

D. atrodorsella, Clem.

Not common. Food, Beggar-tick (*Bidens*).

D. hilarella, Zell.

Not common. Food, Locust and *Sanicula*.

D. fulvipenella, Clem.

Not common. Food, Golden Rod (*Solidago*).

D. lecontella, Clem.

Common.

D. heracliiana, De G.

Not common. Larva in stems of Parsnip and other umbelliferous plants.

GELECHIA, Zell.

G. agrimoniella, Clem.

Not common. Food, *Agrimonia*.

G. alacella, Clem.

Not common. Early stages and food unknown.

G. bilobella, Zell.

Not common. Early stages and food unknown.

G. inscripta, Wlsm.

New Brunswick, in April, rare—Smith.

G. pinifoliella, Chamb.

Jamesburg, common in *Pinus rigida*—Smith.

G. flavicostella, Clem.

Not common. Early stages and food unknown.

G. atributella, Walk.

Common.

G. querciella, Chamb.

Common. Food, Oak.

G. rhoifructella, Clem.

Common. Food, Poplar and Sumac.

G. rubidella, Clem.

Not common. Early stages and food unknown.

G. roseosuffusella, Clem.

Not common. According to Dr. Packard, the larva inhabits the fruit panicles of the Sumac. (Guide, p. 350, 8th ed.)

G. gallæsolidaginis, Riley.

Not common. Food, in stems of Golden Rod (*Solidago*), larva producing a fusiform swelling.

HAMADRYAS, Clem.

H. bassettella, Clem.

Jamesburg, in July, rare—Smith.

SITOTROGA, Hein.

S. cerealella, Oliv.

Common. Larva in kernels of Corn, Wheat, &c.

STROBISIA, Clem.

S. emblemella, Clem.

Scarce. Early stages and food not known.

S. lepidella, Clem.

Rare. Early stages and food unknown.

YPSOLOPHUS, Fabr.

Y. pometellus, Harr.

Common. Food, Apple, Pear, Plum, &c.

DASYCERA, Haw.

D. newmanella, Clem.

Rare. Early stages and food unknown.

ÆCOPHORA, Zell.

Æ. argenticinctella, Clem.

Common. Early stages and food unknown.

BUTALIS, Tr.

B. impositellus, Zell.

Common. Food, various species of *Aster*.

B. basilaris, Zell.

Common. Early stages and food unknown.

B. glandulella, Riley.

Not common. Larva in Acorns.

ARGYRESTHIA, Hüb.

A. andereggiella, Dup.

Common. Early stages and food in this country unknown.

Larva, in Europe, in buds of Hazel and Apple.

GRACILARIA, Zell.

G. sassafraSELLa, Chamb.

Common. Food, Sassafras.

COLEOPHORA, Zell.

C. malivorella, Riley.

Common. Food, Apple, Plum, Cherry.

LAVERNA, Curt.

L. eloisella, Clem.

Scarce. Larva burrows in stalk of Primrose (*Enothera*).

L. phragmitella, Steph.

Common at light, in Newark. In Europe this feeds on *Typha*—Smith.

COSMOPTERYX, Hüb.

C. gemmiferella, Clem.

Rare. Early stages and food unknown.

ANTISPILA, Hüb.

A. nyssæfoliella, Clem.

Common. Food, Pepperidge (*Nyssa sylvatica*). Very destructive.

ASPIDISCA, Clem.

A. splendoriferella, Clem.

Common. Food, Apple.

TISCHERIA, Zell.

T. citripennella, Clem.

Common. Food, Oak.

LITHOCOLLETIS, Zell.

L. hamadryadella, Clem.

Very common. Food, Oak.

L. fitchella, Clem.

Common. Food, Oak.

L. robiniella, Clem.

Common. Food, Locust.

L. caryæfoliella, Clem.

Common. Food, Hickory.

L. guttifnitella, Clem.

Very common. Food, Poison Ivy (*Rhus radicans*).

L. desmodiella, Clem.

Scarce. Food, *Desmodium viridiflorum*.

LEUCANTHIZA, Clem.

L. amphicarpæfoliella, Clem.

Common. Food, Hog-peanut (*Amphicarpa monoica*).

PHYLLOCNISTIS, Zell.

P. vitiginella, Clem.

Common. Food, Grape.

Family PTEROPHORIDÆ.*

PLATYPTILUS, Hüb.

P. ochreodactylus, var. *bischoffii*, Zell.

OXYPTILUS, Zell.

O. nigriciliatus, Zell.

Rare.

O. periscelidactylus, Fitch.

Common. Food, Grape.

PTEROPHORUS, Wallgr.

P. monodactylus, Linn.

Common.

* Mr. Meyrick considers the *Pterophoridae* as belonging to the *Pyalidae* rather than the *Tineidae*, and I am not sure but that he is right. In placing them at the foot of the series, I have followed both precedent and Mr. Beutenmüller's MSS.—J. B. S.

ORDER DIPTERA.

Family CECIDOMYIDÆ.

CECIDOMYIA, Meigen.

C. anthophila, O. S.

C. cornuta, Walsh.

C. culmicola, Morris.

C. destructor, Say.

The Hessian fly. Not destructive in New Jersey.

C. grossulariæ, Fitch.

C. ornata, Say.

C. salicis-brassicoides, Walsh.

I have seen the galls of this species not rarely.

C. vaccinii, J. B. Smith.

Common on Cranberry (*Vaccinium*) and Loose Strife (*Lysimachia*).

DIPLOSION, Lw.

D. caliptera, Fitch.

D. caryæ, O. S.

D. graminis, Fitch.

D. inimica, Fitch.

D. robiniæ, Hald.

D. tritici, Kirby.

Was reported as doing some damage in New Jersey during the season of 1889.

ASPHONDYLIA, Lw.

A. monacha, O. S.

A. recondita, O. S.

A. rudebeckiæ-conspicua, O. S.

LASIOPTERA, Meigen.

L. ventralis, Say.

L. vitis, O. S.

I have seen the galls of this species not infrequently during the present season (1889).

Family MYCETOPHILIDÆ.**MYCETOBIA, Meigen.**

M. divergens, Walk.

DITOMYIA, Winnertz.

D. euzona, Lw.

PLESIASTINA, Winnertz.

P. lauta, Lw.

BOLITOPHILA, Meigen.

B. cinerea, Meigen.

MACROCERA, Meigen.

M. formosa, Lw.

PLATYURA, Meigen.

P. mendica, Lw.

POLYLEPTA, Winnertz.

P. fragilis, Lw.

SOIOPHILA, Meigen.

S. appendiculata, Lw.

LASIOSOMA, Winnertz.

L. fasciata, Say.

EUDICRANA, Lw.

E. obumbrata, Lw.

SYNTEMNA, Winnertz.

S. polyzona, Lw.

PETHINIA, Winnertz.

P. tanypus, Lw.

NEOGLAPHYROPTERA, O. S.

- N. bivittata*, Say.
N. melæna, Lw.
N. oblectabilis, Lw.
N. sublunata, Lw.
N. winthemi, Leh.

LEJA, Meigen.

- L. abbreviata*, Lw.
L. sororcula, Lw.

ALLODIA, Winnertz.

- A. crassicornis*, Stannius.

TRICHONTA, Winnertz.

- T. fœda*, Lw.

ZYGOMYIA, Winnertz.

- Z. ignobilis*, Lw.
Z. ornata, Lw.

EPIOCYPTA, Winnertz.

- E. pulicaria*, Lw.

MYCOTHERA, Winnertz.

- M. paula*, Lw.

MYCETOPHILA, Meigen.

- M. extincta*, Lw.
M. fallax, Lw.
M. ichneumonea, Say.
M. inculta, Lw.
M. mutica, Lw.
M. polita, Lw.
M. procera, Lw.
M. scalaris, Lw.
M. sigmoides, Lw.

SCIARA, Meigen.

- S. femorata*, Say.
S. fuliginosa, Fitch.

S. inconstans, Fitch.

S. mali, Fitch.

S. vulgaris, Fitch.

TRICHOSIA, Winnertz.

T. hebes, Lw.

Family SIMULIDÆ.

There are several species of *Simulium* in the running streams, but I have taken no imagos, and cannot even give a guess at what species we have, from published data.

Family BIBIONIDÆ.

BIBIO, Geoff.

B. albipennis, Say.

I have taken this species in the State. Caldwell, common—Crane.

B. articulatus, Say.

B. femoratus, Wied.

I have taken this species in the State. Caldwell, common—Crane.

B. pallipes, Say.

B. rufithorax, Wied.

B. xanthopus, Wied.

DILOPHUS, Meigen.

D. dimidiatus, Lw.

D. orbatus, Say.

D. thoracicus, Say.

PLECIA, Wied.

P. heteroptera, Say.

SCATOPSE, Geoff.

S. atrata, Say.

Family CULICIDÆ.

CULEX, Linn.

***C. ciliatus*, Fabr.**

Caldwell, common—Crane. Taken quite frequently in New Jersey. One of the common mosquitos. It as frequently takes the collector.

***C. consobrinus*, R. Desv.**

***C. damnosus*, Say.**

Also quite abundant in New Jersey.

***C. triseriatus*, Say.**

More rare, but still obtrusively abundant on occasion.

ANOPHELES, Meigen.

***A. quadrimaculatus*, Say.**

Not common. I was taken by only a single specimen.
Caldwell, common—Crane.

. AÆDES, Meigen.

***A. sapphirinus*, O. S.**

CORETHRA, Meigen.

***C. punctipennis*, Say.**

Family CHIRONOMIDÆ.

CHIRONOMUS, Meigen.

***C. cristatus*, Fabr.**

***C. geminatus*, Say.**

***C. glaucurus*, Wied.**

***C. lineola*, Wied.**

***C. lobifer*, Say.**

***C. modestus*, Say.**

***C. tricinctus*, Meigen.**

TANYPUS, Meigen.

- T. annulatus*, Say.
T. flavicinctus, Lw.
T. pinguis, Lw.
T. tibialis, Say.
T. tricolor, Lw.

CERATOPOGON, Meigen.

- C. festivus*, Lw.
C. longipennis, Lw.
C. lineatus, Lw.
C. plebejus, Lw.
C. rufus, Lw.

HETEROMYIA, Say.

- H. fasciata*, Say.
-

Family ORPHNEPHILIDÆ.**ORPHNEPHILA, Haliday.**

- O. testacea*, Ruthe.
-

Family PSYCHODIDÆ.**PSYCHODA, Latr.**

- P. alternata*, Say.

Common almost everywhere throughout the State.

Family TIPULIDÆ.**DICRANOMYIA, Steph.**

- D. brevirena*, O. S.
D. defuncta, O. S.

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D. globithorax, O. S.

D. immodesta, O. S.

D. liberta, O. S.

D. longipennis, Schum.

D. pubipennis, O. S.

D. rostrifera, O. S.

GERANOMYIA, Haliday.

G. canadensis, Westw.

G. rostrata, Say.

RHIPIDIA, Meigen.

R. maculata, Meigen.

R. fidelis, O. S.

R. domestica, O. S.

LIMNOBIA, Meigen.

L. cinctipes, Say.

L. indigena, O. S.

L. triocellata, O. S.

RHAMPHIDIA, Meigen.

R. flavipes, Macq.

ELEPHANTOMYIA, O. S.

E. westwoodi, O. S.

TOXORRHINA, Lw.

T. magna, O. S.

Described from New Jersey specimens.

ANTOCHA, O. S.

A. opalizans, O. S.

ATARBA, O. S.

A. picticornis, O. S.

TEUCHOLABIS, O. S.

T. complexa, O. S.

RHYPHOLOPHUS, O. S.

R. holotrichus, Say.

R. innocens, O. S.

Recorded from New Jersey.

R. meigenii, O. S.

R. nubilus, O. S.

R. rubellus, O. S.

ERIOPTERA, Meigen.

E. chrysocoma, O. S.

E. chlorophylla, O. S.

E. septemtrionis, O. S.

E. straminea, O. S.

E. villosa, O. S.

E. vespertina, O. S.

E. armillaris, O. S.

E. venusta, O. S.

E. armata, O. S.

E. caloptera, Say.

E. parva, O. S.

Recorded from New Jersey.

E. hirtipennis, O. S.

Recorded from New Jersey.

SYMPLECTA, Meigen.

S. punctipennis, Meigen.

GNOPHOMYIA, O. S.

G. tristissima, O. S.

GONOMYIA, Megerle.

G. blanda, O. S.

G. manca, O. S.

Recorded from New Jersey.

G. subcinerea, O. S.

G. sulphurella, O. S.

CLADURA, O. S.

C. indivisa, O. S.

EPIPHRAGMA, O. S.

E. fascipennis, Say.

LIMNOPHILA, Macq.

L. adusta, O. S.

L. areolata, O. S.

L. contempta, O. S.

L. fuscovaria, O. S.

L. gracilis, Wied.

L. imbecilla, O. S.

L. lenta, O. S.

L. macrocera, Say.

L. montana, O. S.

L. quadrata, O. S.

L. recondita, O. S.

L. rufbasis, O. S.

L. tenuipes, Say.

L. ultima, O. S.

TRIOHCERA, Meigen.

T. regelationis, Linn.

PENTHOPTERA, Schiner.

P. albitarsis, O. S.

AMALOPIS, Haliday.

A. inconstans, O. S.

A. vernalis, O. S.

RAPHIDOLABIS, O. S.

R. tenuipes, O. S.

R. flaveola, O. S.

TRIGOMA, Schiner.

T. exsculpta, O. S.

PTYCHOPTERA, Meigen.

P. quadrifasciata, Say.

P. rufocincta, O. S.

BITTACOMORPHA, Westw.

B. clavipes, Fabr.

Common along ditches of cranberry marshes in Ocean county,
in May. Rare at Jamesburg, in June.

IDIOPLASTA, O. S.

I. fitchii, O. S.

TIPULA, Linn.

T. abdominalis, Say.

T. bella, Lw.

T. costalis, Say.

T. cunctans, Say.

T. dejecta, Walk.

T. fasciata, Lw.

Recorded from the Palisades, New Jersey.

T. flavicans, Fabr.

T. fuliginosa, Say.

T. grata, Lw.

T. infuscata, Lw.

T. ignobilis, Lw.

T. maculipennis, Wied.

T. tetrocephala, Lw.

Recorded from New Jersey.

T. tricolor, Fabr.

T. trivittata, Say.

PACHYRRHINA, Macq.

P. collaris, Say.

P. ferruginea, Fabr.

P. incurva, Lw.

Y

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P. macrocera, Say.

P. unifasciata, Lw.

P. virescens, Lw.

Recorded from New Jersey.

DOLICHOPEZA, Curt.

D. annulata, Say.

Family RHYPHIDÆ.

RHYPHUS, Latr.

R. alternatus, Say.

R. fenestralis, Scop.

R. punctatus, Meigen.

Family XYLOPHAGIDÆ.

XYLOPHAGUS, Meigen.

X. lugens, Lw.

X. reflectens, Walk.

SUBULA, Meigen.

S. palipes, Lw.

Family CÆNOMYIDÆ.

CÆNOMYIA, Latr.

C. pallida, Say.

Family STRATYOMYIDÆ.

METOPONIA, Macq.

M. fuscitarsis, Say.

M. obscuriventris, Lw.

BERIS, Latr.

B. viridis, Say.

SARGUS, Fabr.

S. decorus, Say.

Common at Jamesburg.

S. elegans, Lw.

S. xanthopus, Wied.

CHLOROMYIA, Dunc.

C. viridis, Say.

Common throughout the State.

OXYCERA, Meigen.

O. maculata, Oliv.

O. unifasciata, Lw.

ODONTOMYIA, Meigen.

O. flavicornis, Oliv.

O. lasiophthalma, Lw.

Recorded from New Jersey.

O. nigerrima, Lw.

STRATIOMYIA, Lw.

S. angularis, Lw.

S. flaviceps, Macq.

S. marginalis, Lw.

S. vicina, Macq.

NEMOTELUS, Geoff.

N. pallipes, Say.

Family TABANIDÆ.**PANGONIA, Latr.**

P. chrysocoma, O. S.

P. pigra, O. S.

P. tranquilla, O. S.

CHRYSOPS, Meigen.

- C. callidus*, O. S.
- C. celer*, O. S.
- C. excitans*, Walk.
- C. fallax*, O. S.
- C. flavidus*, Wied.
- C. hilaris*, O. S.
- C. moechus*, O. S.
- C. niger*, Macq.
Caldwell, not common—Crane.
- C. obsoletus*, Say.
- C. plangens*, Wied.
- C. pudicus*, O. S.
- C. univittatus*, Macq.
- C. vittatus*, Wied.
Caldwell, common—Crane.

THERIOPLECTES, Zell.

- T. cinctus*, Fabr.
- T. lasiophthalmus*, Macq.
Caldwell, common—Crane.
- T. trispilus*, Wied.

TABANUS, Linn.

- T. americanus*, Först.
- T. atratus*, Fabr.
Common throughout the State.
- T. catentatus*, O. S.
- T. cingulatus*, Macq.
- T. coffeatus*, Macq.
- T. costalis*, Wied.
- T. exul*, O. S.
Recorded from New Jersey.
- T. fulvulus*, Wied.
- T. giganteus*, De G.

T. lineola, Fabr.

The most common species in the State.

T. longulus, O. S.

T. melanocerus, Wied.

T. mexicanus, Linn.

Recorded from New Jersey.

T. nigrescens, Pal. Beauv.

Recorded from New Jersey.

T. nigrovittatus, Macq.

Recorded from New Jersey.

T. nivosus, O. S.

Described from New Jersey specimens.

T. pumilus, Macq.

Caldwell, not common—Crane.

T. reinwardtii, Wied.

T. stygius, Say.

T. sulcifrons, Macq.

T. trimaculatus, Pal. Beauv.

Caldwell, common—Crane.

T. variegatus, Fabr.

ATYLOTUS, O. S.

A. bicolor, Wied.

Family LEPTIDÆ.

TRIPTOTRICHA, Lw.

T. fasciventris, Lw.

T. rufithorax, Say.

CHRY SOPILA, Macq.

C. basilaris, Say.

C. fasciata, Say.

Caldwell, not common—Crane.

C. ornata, Say.

Caldwell, rare—Crane.

C. quadrata, Say.

C. thoracica, Fabr.

LEPTIS, Fabr.

L. albicornis, Say.

L. mystacea, Macq.

Caldwell, rare—Crane.

L. punctipennis, Say.

L. plumbea, Say.

L. scapularis, Lw.

Family ASILIDÆ.

LEPTOGASTER, Meigen.

L. flavipes, Lw.

L. histrio, Wied.

L. ochraceus, Schiner.

L. testaceus, Lw.

CERATURGUS, Wied.

C. cruciatus, Say.

DIOCTRIA, Meigen.

D. albius, Walk.

LAPHYSTIA, Lw.

L. sexfasciata, Say.

Recorded from New Jersey.

ECHTHOPODA, Lw.

E. formosa, Lw.

HOLOPOGON, Lw.

H. guttula, Wied.

H. philadelphicus, Schiner.

STICHOPOGON, Lw.

S. argenteus, Say.

Sandy Hook, August. Anglesea, July 22d. Not rare.

S. trifasciatus, Say.

HOLCOCEPHALA, Jaenn.

H. abdominalis, Say.

NICOCLES, Jaenn.

N. politus, Say.

TARACTICUS, Lw.

T. octopunctatus, Say.

DEROMYIA, Phillipi.

D. discolor, Lw.

D. umbrina, Lw.

D. winthemi, Wied.

ATOMOSIA, Macq.

A. glabrata, Say.

A. puella, Wied.

Caldwell, rare—Crane.

CEROTAINIA, Schiner.

C. macrocera, Say.

DASYLLIS, Lw.

D. flavicollis, Say.

D. posticata, Say.

D. thoracica, Fabr.

D. tergissa, Say.

HYPERECHIA, Schiner.

H. atrox, Wied.

DASYLLIS, Lw.

D. thoracica, Fabr.

Caldwell, common—Crane.

LAPHRIA, Meigen.

L. sericea, Say.

LAMPRIA, Macq.

L. bicolor, Wied.

MALLOPHORA, Macq.

M. laphroides, Wied.

M. clausicella, Macq.

PROMACHUS, Lw.

P. bastardi, Macq.

P. apivorus, Fitch.

Caldwell, common—Crane.

ERAX, Macq.

E. bastardi, Macq.

E. æstuans, Wied.

PROCTACANTHUS, Macq.

P. philadelphicus, Macq.

ASILUS, Linn.

A. sericeus, Say.

I have observed a few specimens of this species the present season. Caldwell, common—Crane.

A. femoralis, Macq.

A. tibialis, Macq.

NEOITAMUS, O. S.

N. ænobarbus, Lw.

TOLMERUS, Lw.

T. annulipes, Macq.

OMMATIUS, Illiger.

O. tibialis, Say.

Family MIDAIDÆ.**MIDAS, Fabr.**

M. clavatus, Dru.

Not common. Taken at Jamesburg. Generally distributed.
Caldwell, common—Crane.

Family BOMBYLIDÆ.**EXOPROSOPA, Macq.**

E. emarginata, Macq.

E. fascipennis, Say.

Caldwell, rare—Crane.

E. fasciata, Macq.

Caldwell, common—Crane.

ANTHRAX, Scop.

A. alternata, Say.

A. fulvohirta, Wied.

Caldwell, common—Crane.

A. gracilis, Macq.

A. sinuosa, Wied.

ARGYRAMCEBA, Schiner.

A. analis, Say.

A. cedipus, Fabr.

Caldwell, rare—Crane.

A. simson, Fabr.

Caldwell, common—Crane.

LOMATIA, Meigen.

L. elongata, Say.

BOMBYLIUS, Linn.

B. atriceps, Lw.

B. fratellus, Wied.

Caldwell, common—Crane.

B. pygmæus, Fabr.

Caldwell, not common—Crane.

B. varius, Fabr.

SPARNOPOLIUS, Lw.

S. fulvus, Wied.

PHTHIRIA, Meigen.

P. sulphurea, Lw.

Recorded from New Jersey.

GERON, Meigen.

G. calvus, Lw.

G. macropterus, Lw.

G. subauratus, Lw.

G. vitripennis, Lw.

SYSTROPUS, Wied.

S. macer, Lw.

TOXOPHORA, Meigen.

T. amphitea, Walk.

Family THEREVIDÆ.

PSILOCEPHALA, Zett.

P. erythrura, Lw.

P. melanoprocta, Lw.

P. nigra, Say.

THEREVA, Latr.

T. candidata, Lw.

T. gilvipes, Lw.

TABUDA, Walk.*T. fulvipes*, Walk.

Recorded from New Jersey.

Family SCENOPINIDÆ.**SCENOPINUS, Latr.***S. fenestralis*, Linn.*S. lævifrons*, Meigen.

Family CYRTIDÆ.**OPSEBIUS, Costa.***O. gagatinus*, Lw.**ONCODES, Latr.***O. pallidipennis*, Lw.

Family EMPIDÆ.**SYNECHES, Walk.***S. simplex*, Walk.*S. thoracicus*, Say.**EMPIS, Linn.***E. longipes*, Lw.

Recorded from New Jersey.

E. varipes, Lw.**RHAMPHOMYIA, Meigen.***R. dimidiata*, Lw.*R. fumosa*, Lw.*R. gracilis*, Lw.*R. scolopacea*, Say.

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R. tristis, Walk.

R. umbilicata, Lw.

HILARA, Meigen.

H. gracilis, Lw.

H. nigriventris, Lw.

CYRTOMA, Meigen.

C. longipes, Lw.

STILPON, Lw.

S. varipes, Lw.

TACHYDROMIA, Meigen.

T. mesogramma, Lw.

T. pachycnema, Lw.

T. trivialis, Lw.

TACHYPEZA, Meigen.

T. fenestrata, Say.

HEMERODROMIA, Meigen.

H. notata, Lw.

H. vittata, Lw.

CLINOCERA, Meigen.

C. lineata, Lw.

C. conjuncta, Lw.

C. maculata, Lw.

Family DOLICHOPODIDÆ.

DOLICHOPUS, Latr.

D. batillifer, Lw.

D. bifractus, Lw.

D. comatus, Lw.

D. cuprinus, Wied.

D. funditor, Lw.

D. gratus, Lw.

Recorded from New Jersey.

- D. longipennis*, Lw.
- D. ovatus*, Lw.
- D. pachycnemus*, Lw.
- D. quadrilamellatus*, Lw.

Recorded from New Jersey.

- D. ruficornis*, Lw.
- D. scapularis*, Lw.
- D. scoparius*, Lw.
- D. setifer*, Lw.

GYMNOPTERNUS, Lw.

- G. albiceps*, Lw.
- G. barbatulus*, Lw.
- G. calacochrus*, Lw.
- G. debilis*, Lw.
- G. despiciatus*, Lw.
- G. exilis*, Lw.
- G. flavus*, Lw.
- G. frequens*, Lw.
- G. lævigatus*, Lw.
- G. minutus*, Lw.
- G. nigribarbus*, Lw.
- G. parvicornis*, Lw.
- G. subdilatatus*, Lw.
- G. ventralis*, Lw.

PELASTONEURUS, Lw.

- P. cognatus*, Lw.
- P. vagans*, Lw.

ARGYRA, Macq.

- A. calceata*, Lw.
- A. calcitrans*, Lw.

SYNARTHERUS, Lw.

- S. barbatus*, Lw.
- S. cinereiventris*, Lw.

PORPHYROPS, Meigen.

P. fumipennis, Lw.

P. melampus, Lw.

DIAPHORUS, Meigen.

D. lamellatus, Lw.

D. mundus, Lw.

D. opacus, Lw.

D. sodalis, Lw.

CHRYBOTUS, Meigen.

C. affinis, Lw.

C. discolor, Lw.

C. longimanus, Lw.

C. validus, Lw.

SYMPYCNUS, Lw.

S. lineatus, Lw.

CAMPIONEMUS, Haliday.

C. hirtipes, Lw.

LIANCALUS, Lw.

L. genualis, Lw.

SCELLUS, Lw.

S. exustus, Walk.

HYDROPHORUS, Fallen.

H. parvus, Lw.

H. pirata, Lw.

MEDETERUS, Fischer.

M. nigripes, Lw.

CHRYBOTIMUS, Lw.

C. delicatus, Lw.

C. pusio, Lw.

SAUCROPUS, Lw.

S. carbonifer, Lw.

S. superbiens, Lw.

S. tenuis, Lw.

PSILOPUS, Meigen.

- P. bicolor**, Lw.
- P. comatus**, Lw.
- P. filipes**, Lw.
- P. inermis**, Lw.
- P. patibulatus**, Say.
- P. scintillans**, Lw.
- P. siphon**, Say.

Common throughout the State. Caldwell, common—Crane.

Family LONCHOPTERIDÆ.**LONCHOPTERA, Meigen.**

- L. lutea**, Panz.
 - L. riparia**, Meigen.
-

Family SYRPHIDÆ.**MICRODON, Meigen.**

- M. globosus**, Fabr.
- M. tristis**, Lw.
- M. rufipes**, Macq.

CHRYSOSEXUM, Meigen.

- C. laterale**, Lw.
- C. pubescens**, Lw.
- C. ventricosum**, Lw.

PARAGUS, Latr.

- P. angustifrons**, Lw.
- P. bicolor**, Fabr.
- P. tibialis**, Fallen.

PIPIZA, Fallen.

- P. modesta**, Lw.
- P. calcarata**, Lw.

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P. salax, Lw.

P. nigribarba, Lw.

P. femoralis, Lw.

P. albipilosa, Will.

P. nigripilosa, Will.

PSILOTA, Meigen.

P. buccata, Macq.

CHRYSOGASTER, Meigen.

C. nigripes, Lw.

Recorded from New Jersey.

C. nitida, Wied.

C. pictipennis, Lw.

Recorded from New Jersey.

CHILOSIA, Meigen.

C. cyanescens, Lw.

MELANOSTOMA, Schiner.

M. obscurum, Say.

M. mellinum, Linn.

Jamesburg—Smith.

PYROPHÆNA, Schiner.

P. rosarum, Fabr.

P. ocymi, Fabr.

PLATYCHIRUS, St. F. & Serv.

P. quadratus, Say.

P. hyperboreus, Staeger.

P. peltatus, Meigen.

SYRPHUS, Fabr.

S. arcuatus, Fallen.

S. diversipes, Macq.

S. ribesii, Linn.

S. torvus, O. S.

Caldwell, common—Crane.

- S. lesueurii*, Macq.
S. abbreviatus, Zett.
S. americanus, Wied.
S. xanthostomus, Will.

DIDEA, Macq.

- D. fuscipes*, Lw.
 Collected by myself at Jamesburg.

XANTHOGRAMMA, Schiner.

- X. felix*, O. S.
X. emarginata, Say.
X. flavipes, Lw.
X. aqualis, Lw.

ALLOGRAPTA, O. S.

- A. obliqua*, Say.
 Caldwell, rare—Crane.

MESOGRAPTA, Macq.

- M. polita*, Say.
 Caldwell, not common—Crane.
M. marginata, Say.
 Caldwell, common—Crane. Jamesburg—Smith.
M. geminata, Say.

NEOASOIA, Will.

- N. globosa*, Walk.
N. distincta, Will.

SPHEGINA, Meigen.

- S. keeniana*, Will.
S. rufiventris, Lw.
S. lobata, Lw.

BACCHA, Fabr.

- B. tarchetius*, Walk.
 Recorded from New Jersey.

Z

- B. lugens*, Lw.
- B. fuscipennis*, Say.
- B. aurinota*, Harris.
- B. cognata*, Lw.

MYIOLEPTA, Newn.

- M. nigra*, Lw.

RHINGIA, Scop.

- R. nasica*, Say.

VOLUCELLA, Geoff.

- V. evecta*, Walk.
- V. vesiculosa*, Fabr.

SERICOMYIA, Meigen.

- S. militaris*, Walk.
- S. chrysotoxoides*, Macq.

ERISTALIS, Latr.

- E. tenax*, Linn.

I have taken this in New Jersey frequently.

- E. æneus*, Fabr.

- E. dimidiatus*, Wied.

Caldwell, not common—Crane.

- E. saxorum*, Wied.

New Brunswick, Jamesburg.

- E. brousi*, Will.

- E. transversus*, Wied.

Caldwell, not common—Crane. New Brunswick.

- E. vinetorum*, Fabr.

HELOPHILUS, Meigen.

- H. latifrons*, Lw.

- H. similis*, Macq.

Jamesburg, not common.

- H. lætus*, Lw.

- H. chrysostomus*, Wied.

- H. distinctus*, Will.

H. conostomus, Will.

H. integer, Lw.

PTERALLASTES, Lw.

P. thoracicus, Lw.

TEUCHOONEMIS, O. S.

T. lituratus, Lw.

MALLOTA, Meigen.

M. posticata, Fabr.

M. barda, Say.

Caldwell, common—Crane.

M. cimbiciformis, Fallen.

TRIODONTA, Macq.

T. curvipes, Wied.

TROPIDIA, Meigen.

T. quadrata, Say.

Caldwell, rare—Crane.

ORIORHINA, Hoffm.

O. verbosa, Harris.

O. umbratilis, Will.

O. intersistens, Walk.

Recorded from New Jersey.

O. analis, Macq.

O. decora, Macq.

CRIOPRORA, O. S.

C. cyanogaster, Lw.

BRACHYPALPUS, Macq.

B. frontosus, Lw.

XYLOTA, Meigen.

X. pigra, Fabr.

X. bicolor, Lw.

X. ejuncida, Say.

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X. fraudulosa, Lw.

X. angustiventris, Lw.

X. curvipes, Lw.

X. chalybea, Wied.

X. elongata, Will.

X. quadrimaculata, Lw.

Caldwell, not common—Crane.

SENOGASTER, Macq.

S. comstocki, Will.

SYRITTA, St. F. & Serv.

S. pipiens, Linn.

Common at Jamesburg.

SPILOMYIA, Meigen.

S. longicornis, Lw.

S. fusca, Lw.

S. hamifera, Lw.

S. quadrifasciata, Say.

TEMNOSTOMA, St. F. & Serv.

T. bombylans, Fabr.

T. pictulum, Pa.

T. excentricum, Harris.

T. alternans, Lw.

MILESIA, Latr.

M. ornata, Fabr.

Caldwell, not common—Crane.

SPHECOMYIA, Latr.

S. vittata, Wied.

CERIA, Fabr.

C. abbreviata, Lw.

Family CONOPIDÆ.**CONOPS, Linn.**

- C. genualis*, Lw.
C. obscuripennis, Will.
C. sagittarius, Say.
Caldwell, common—Crane.
C. sylvosus, Will.
Caldwell, rare—Crane.
C. tibialis, Say.
Caldwell, not common—Crane.
C. xanthopareus, Will.

STYLOGASTER, Macq.

- S. stylatus*, Fabr.

DALMANIA, R. Deesv.

- D. nigriceps*, Lw.

MYOPA, Fabr.

- M. fulvifrons*, Say.
M. vesiculosa, Say.
-

Family PIPUNCULIDÆ.**PIPUNOULUS, Latr.**

- P. nigripes*, Lw.
-

Family PLATYPEZIDÆ.**CALLOMYIA, Meigen.**

- C. divergens*, Lw.
C. notata, Lw.

PLATYPEZA, Meigen.

- P. flavicornis*, Lw.
P. obscura, Lw.
P. velutina, Lw.

Family ŒSTRIDÆ.

GASTROPHILUS, Leach.

G. equi, Fabr.

Caldwell, common—Crane.

G. hæmorrhoidalis, Linn.

G. nasalis, Linn.

Caldwell, not common—Crane.

All of these affect the horse, and the species are common to Europe and America.

HYPODERMA, Clark.

H. bovis, DeG.

Bots on oxen.

H. lineata, Villers.

Forming bots on sheep. Both are common to Europe and North America.

ŒSTRUS, Linn.

Œ. ovis, Linn.

Forming bots on sheep. Common to Europe and North America.

CUTEREBRA, Clark.

C. americana, Fabr.

C. buccata, Fabr.

C. cuniculi, Clark.

C. emasculator, Fitch.

C. horripilum, Clark.

C. scutellaris, Lw.

Family TACHINIDÆ.

HYALOMYIA, R. Desv.

H. triangulifera, Lw.

TRICHOPODA, Latr.

T. pennipes, Fabr.

HYSTRICIA, Macq.

H. vivida, Harr.

Common throughout the State. Caldwell—Crane.

JURINIA, R. Desv.

J. algens, Wied.

J. aterrima, R. Desv.

J. boscii, R. Desv.

J. hystrix, Fabr.

GYMNOCHÆTA, R. Desv.

G. alcedo, R. Desv.

MICROPALPUS, Macq.

M. distinctus, R. Desv.

NEMORÆA, R. Desv.

N. leucaniæ, Kirkp.

Parasitic on the Army Worm, *L. unipuncta*.

EXORISTA, Meigen.

E. cecropiæ, Riley.

E. doryphoræ, Riley.

E. phycitæ, LeB.

MASICERA, Macq.

M. archippivora, Riley.

BELVOISIA, R. Desv.

B. bifasciata, Fabr.

DEGEERIA, Meigen.

D. lateralis, Macq.

SCOPOLIA, R. Desv.

S. lateralis, Macq.

EUTHERA, Lw.

E. tentatrix, Lw.

PTILOCHERA, Macq.

P. americana, Macq.

The *Tachinid* fauna of New Jersey, will, when studied, develop many times the number of species above listed. The imperfection of the list is caused not only by the fact that few of the species are recorded from New Jersey, but also because the entire family is very incompletely worked up.

Family DEXIDÆ.

DEXIA, Meigen.

D. cerata, Walk.

D. harpasa, Walk.

D. punctata, R. Desv.

SERICOCERA, Macq.

S. pictipennis, Macq.

MELANOPHORA, Meigen.

M. roralis, Linn.

MICROPHTHALMA, Macq.

M. nigra, Macq.

Family SARCOPHAGIDÆ.

SARCOPHAGA, Meigen.

S. carnaria, Linn.

Caldwell, common—Crane.

S. consobrina, R. Desv.

S. georgina, Wied.

Family MUSCIDÆ.

STOMOXYS, Geoffr.

S. calcitrans, Linn.

Common everywhere in the State, and a great pest to cattle.

HÆMATOBIA, R. Desv.

H. serrata, R. Desv.

The "Horn Fly," "Buffalo Fly" or "Texas Fly." Has invaded all the southern and western counties, and is travelling east and north.

IDIA, Meigen.

I. viridis, Wied.

MESEMBRINA, Meigen.

M. resplendens, Wahlb.

CALLIPHORA, R. Desv.

C. erythrocephala, Meigen.

C. vomitoria, Linn.

Common all over the State. Caldwell—Crane.

POLLENIA, R. Desv.

P. rudis, Fabr. .

Not rare in houses in September. Less common earlier in the season.

LUCILIA, R. Desv.

L. brunnica, R. Desv.

L. cæsar, Linn.

Common throughout the State.

L. consobrina, Macq.

L. cornicina, Fabr.

L. fraterna, Macq.

L. macellaria, Fabr.

L. philadelphica, R. Desv.

PYRELLIA, R. Desv.

P. cadaverina, Linn.

MUSCA, Linn.

M. domestica, Linn.

The common House Fly, abundant everywhere.

OYRTONEURA, Macq.

O. stabulans, Fall.

MYOSPILA, Rond.

M. meditabunda, Fabr.

Family ANTHOMYIDÆ.

ARICIA, R. Desv.

A. morioides, Zett.

SPILOGASTER, Macq.

S. angelicæ, Meigen.

S. urbana, Meigen.

HYDROTÆA, R. Desv.

H. armipes, Fall.

H. dentipes, Meigen.

OPHYRA, R. Desv.

O. leucostoma, Wied.

LIMNOPHORA, R. Desv.

L. diaphana, Wied.

Caldwell, not common—Crane.

L. stygia, Meigen.

ANTHOMYIA, Meigen.

A. brassicæ, Bouché

On Cabbage. Locally very common and destructive.

A. campestris, R. Desv.

A. ceparum, Meigen.

On Onions. Locally common and injurious.

A. raphani, Harris.

On Radishes. Not reported in 1889.

A. zeas, Riley.

Injures Corn. Not recorded from New Jersey as yet.

HOMALOMYIA, Bouché.

- H. canicularis*, Linn.
- H. manicata*, Meigen.
- H. scalaris*, Fabr.
- H. tetracantha*, Lw.

LISPE, Latr.

- L. uliginosa*, Fallen.

CÆNOSIA, Meigen.

- C. calopyga*, Lw.
 - C. nivea*, Lw.
 - C. fuscopunctata*, Macq.
-

Family CORDYLURIDÆ.**CORDYLURA, Fallen.**

- C. adusta*, Lw.

Recorded from New Jersey.

- C. bimaculata*, Lw.
- C. latifrons*, Lw.
- C. pleuritica*, Lw.
- C. terminalis*, Lw.

SCATOPHAGA, Meigen.

- S. squalida*, Meigen.

FUCCELLIA, R. Desv.

- F. fucorum*, Fallen.
-

Family HELOMYZIDÆ.**HELOMYZA, Fallen.**

- H. lateritia*, Lw.
- H. longipennis*, Lw.
- H. plumata*, Lw.

CECOTHECA, Lw.

CE. fenestralis, Fallen.

Family SCIOMYZIDÆ.

SCIOMYZA, Fallen.

S. albocostata, Fallen.

S. luctifera, Lw.

S. nana, Fallen.

S. obtusa, Fallen.

S. pubera, Lw.

S. tenuipes, Lw.

S. vittata, Haliday.

TETANOCERA, Latr.

T. arcuata, Say.

T. combinata, Lw.

T. flavescens, Lw.

T. pallida, Lw.

T. pictipes, Lw.

T. plebeja, Lw.

T. plumosa, Lw.

T. saratogensis, Fitch.

T. sparsa, Lw.

DRYOMYZA, Fallen.

D. anilis, Fallen.

D. simplex, Lw.

Family PSILIDÆ.

LOXOCERA, Meigen.

L. cylindrica, Say.

L. pleuritica, Lw.

PSILA, Meigen.

P. lateralis, Lw.

P. sternalis, Lw.

Family MICROPEZIDÆ.**CALOBATA, Meigen.**

C. antennipennis, Say.

C. lasciva, Fabr.

Family ORTALIDÆ.**PYRGOTA, Wied.**

P. undata, Wied.

Caldwell, not common—Crane.

P. valida, Harris.

AMPHICNEPHES, Lw.

A. pertusus, Lw.

RIVELLIA, R. Desv.

R. viridulans, R. Desv.

Caldwell, rare—Crane.

CAMPTONEURA, Macq.

C. picta, Fabr.

IDANA, Lw.

I. marginata, Say.

TEPHRONOTA, Lw.

T. humilis, Lw.

STICTOCEPHALA, Lw.

S. cribrum, Lw.

S. corticalis, Fitch.

S. vau, Say.

CALLOPISTRIA, Lw.

C. annulipes, Macq.

SEOPTERA, Kirby.

S. vibrans, Linn.

EUXESTA, Lw.

E. notata, Wied.

CHÆTOPIS, Lw.

C. aenea, Wied.

Family TRYPETIDÆ.

TRYPETA, Meigen.

T. fratria, Lw.

T. suavis, Lw.

T. longipennis, Wied.

Caldwell, common—Crane.

T. obliqua, Say.

T. polita, Lw.

T. cingulata, Lw.

Recorded from Long Branch, New Jersey.

T. pomonella, Walsh.

Locally injurious to Apple, but seems confined to very few varieties.

T. rotundipennis, Lw.

T. sparsa, Wied.

T. comma, Wied.

T. latifrons, Lw.

T. solidaginis, Fitch.

T. alba, Lw.

T. albidipennis, Lw.

T. vernoniæ, Lw.

T. seriata, Lw.

T. angustipennis, Lw.

- T. clathrata*, Lw.
T. geminata, Lw.
T. bella, Fitch.
T. festiva, Lw.
-

Family LONCHÆIDÆ.

- P. superba*, Lw. PALLOPTERA, Fallen.
LONCHÆA, Fallen.
L. polita, Say.
L. rufitarsis, Macq.
-

Family SAPROMYZIDÆ.

- S. compedita*, Lw. SAPROMYZA, Fallen.
S. fraterna, Lw.
S. lupulina, Fabr.
S. longipennis, Meigen.
S. philadelphica, Lw.
S. quadrilineata, Lw.
S. vulgaris, Fitch.

LAUXANIA, Latr.

- L. cylindricornis*, Fabr.
L. frontalis, Lw.
L. gracilipes, Lw.
L. manuleata, Lw.
L. obscura, Lw.
-

Family PHYCODROMIDÆ.

- C. frigida*, Fallen. CÆLOPA, Meigen.
C. nitidula, Zett.

Both species are common to Europe and North America.

Family HETERONEURIDÆ.

HETERONEURA, Fallen.

H. albimana, Meigen.

Also common to Europe and North America.

Family OPOMYZIDÆ.

OPOMYZA, Fallen.

O. signicosta, Walk.

SOYPHELLA, R. Desv.

S. flava, Linn.

Family SEPSIDÆ.

SEPSIS, Fallen.

S. similis, Macq.

NEMOPODA, R. Desv.

N. cylindrica, Fabr.

N. minuta, Wied.

Family PIOPHILDÆ.

PIOPHILA, Fallen.

P. casei, Linn.

The common "Cheese Mite."

P. nigriceps, Meigen.

P. petasionis, L. Duf.

Family DIOPSIDÆ.

SPHYRACEPHALA, Say.

S. brevicornis, Say.

Family EPHYDRIDÆ.**DICHAETA, Meigen.**

D. brevicauda, Lw.

NOTIPHILA, Fallen.

N. bella, Lw.

N. carinata, Lw.

N. scalaris, Lw.

N. unicolor, Lw.

N. vittata, Lw.

PARALIMNA, Lw.

P. appendiculata, Lw.

PSILOPA, Fallen.

P. atra, Lw.

P. scoriacea, Lw.

HYDRELLIA, R. Desv.

H. formosa, Lw.

H. hypoleuca, Lw.

H. ischiaca, Lw.

H. obscuriceps, Lw.

H. scapularis, Lw.

H. valida, Lw.

PHILYGRIA, Stenh.

P. debilis, Lw.

P. fuscicornis, Lw.

PARYDRA, Stenh.

P. abbreviata, Lw.

P. bituberculata, Lw.

P. breviceps, Lw.

P. paullula, Lw.

P. quadrituberculata, Lw.

EPHYDRA, Fallen.

E. atrovirens, Lw.

E. subopacus, Lw.

E. obscuripes, Lw.

SCATELLA, R. Desv.

S. favillacea, Lw.

S. lugens, Lw.

S. quadrata, Fallen.

CÆNIA, R. Desv.

C. spinosa, Lw.

ILYTHERA, Haliday.

I. spilota, Curt.

Family GEOMYZIDÆ.

DIASTATA, Meigen.

D. pulchra, Lw.

Family DROSOPHILIDÆ.

PHORTIOA, Schiner.

P. leucostoma, Lw.

STEGANA, Meigen.

S. hypoleuca, Meigen.

S. nigra, Meigen.

DROSOPHILA, Fallen.

D. graminum, Fallen.

D. quinaria, Lw.

D. transversa, Fallen.

Family OSCINIDÆ.**GAURAX, Lw.***G. anchora*, Lw.*G. festivus*, Lw.**OSCINIS, Latr.***O. atriceps*, Lw.*O. dorsata*, Lw.*O. umbrosa*, Lw.**MEROMYZA, Meigen.***M. americana*, Fitch.

Common throughout the State, but not injurious.

SIPHONELLA, Macq.*S. obesa*, Fitch.**CHLOROPS, Meigen.***C. versicolor*, Lw.*C. crocota*, Lw.*C. grata*, Lw.

Family AGROMYZIDÆ.**LOBIOPTERA, Wahlb.***L. arcuata*, Lw.**AULACIGASTER, Macq.***A. ruftarsis*, Macq.**LEUCOPIS, Meigen.***L. simplex*, Lw.**DESMOMETOPA, Lw.***D. latipes*, Meigen.**AGROMYZA, Fallen.***A. æneiventris*, Fallen.*A. angulata*, Lw.

A. coronata, Lw.

A. magnicornis, Lw.

A. simplex, Lw.

A. tritici, Fitch.

A. virens, Lw.

PHYLLOMYZA, Fallen.

P. nitens, Lw.

Family BORBORIDÆ.

BORBORUS, Meigen.

B. equinus, Fallen.

Family PHORIDÆ.

GYMNOPHORA, Macq.

G. arcuata, Meigen.

PHORA, Latr.

P. atra, Fabr.

P. fuscipes, Macq.

P. rufipes, Meigen.

Family HIPPOBOSCIDÆ.

OLFERSIA, Wied.

O. americana, Leach.

Lives on *Bubo virginianus* and *Buteo borealis*.

O. albipennis, Say.

Lives on *Ardea herodias*.

O. ardeæ, Macq.

ORNITHOMYIA, Latr.

O. avicularia, Linn.

O. nebulosa, Say.

O. pallida, Say.

O. confluens, Say.

LILOPTENA, Nitsch.

L. depressa, Say.

MELOPHAGUS, Latr.

M. ovinus, Linn.

HIPPOBOSCA, Linn.

H. equina, Linn.

**ORDER ORTHOPTERA.**

For the list of this order, I am primarily indebted to Mr. Lawrence Bruner, the Entomologist of the Nebraska Experiment Station, and an authority in the present order. He is to be credited with the list in its entirety so far as systematic arrangement and general locality are concerned. I have, however, added Mr. Crane's authority for species taken by him, and have given also some notes of species taken by myself. I have also made use of Mr. William T. Davis' list of the Orthoptera of Staten Island for dates of appearance, and sometimes for notes on habits.

DERMAPTERA.**Family FORFICULIDÆ.****FORFICULA, Linn.**

F. aculeata, Scudd.

F. auricularia, Linn.

The European "Ear Wig." An introduced species.

SPONGOPHORA, Serv.

S. brunneipennis, Serv.

ANISOLABIA, Fieb.

A. maritima, Bon.

Common near the steamboat pier at Sandy Hook, but I found it nowhere else. This species was not on Mr. Bruner's list.

LABIA, Leach.

L. minor, Linn.

Common to this country and Europe. Not rare. Caldwell, rare—Crane.

ORTHOPTERA.

Family BLATTIDÆ.

PHYLLODROMIA, Serv.

P. germanica, Linn.

The common small cockroach, water bug or croton bug. Disgustingly common in some localities.

P. borealis, Sauss.

ISCHNOPTERA, Burm.

I. unicolor, Scudd.

Under bark, June—Davis.

I. pennsylvanica, De G.

Under bark, June—Davis. Caldwell, common—Crane.

PERIPLANETA, Burm.

P. orientalis, Linn.

The "Black Beetle" or "Oriental Roach." A large, black species, common in houses around kitchen sinks. Newark, not common—Crane.

P. americana, Linn.

Caldwell, common—Crane. New Brunswick, rare—Smith.

Family PHASMIDÆ.**DIAPHEROMERA, Gray.**

D. femorata, Say.

The "Walking Stick." I have taken a few specimens of this peculiar creature. Caldwell, not common—Crane.

Family MANTIDÆ.**STAGMOMANTIS, Scudd.**

S. carolina, Burm.

S. dimidiata, Burm.

Family GRYLLIDÆ.**TRIDACTYLUS, Oliv.**

T. terminalis, Scudd.

T. apicalis, Say.

I took a specimen of one of these odd little crickets in Ocean county the present season.

GRYLLOTALPA, Latr.

G. borealis, Burm.

The mole cricket. Lives in dams and along ditches, and has been recorded as injurious in potato fields. August—Davis. Caldwell, not common—Crane.

G. columbia, Scudd.

Habits like the preceding. August—Davis.

GRYLLUS, Linn.

G. abbreviatus, Serv.

Caldwell, common—Crane. Common also on cranberry bogs, where it is supposed to eat into the fruit.

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G. luctuosus, Serv.

Caldwell, common—Crane.

G. pennsylvanicus, Burm.

Newark, New Brunswick, Jamesburg, on cranberry bogs—Smith.

G. neglectus, Scudd.

Caldwell, common—Crane, sub nom. *niger*. Ocean county, on cranberry bogs—Smith.

NEMOBIUS, Serv.

N. fasciatus, De G.

Jamesburg, on cranberry bogs—Smith.

N. vittatus, Harris.

Omitted by Mr. Bruner. Caldwell, common—Crane. Late June and July—Davis.

N. exiguus, Say.

In salt meadows, on *Iva frutescens*, in August—Davis.

ANAXIPHUS, Sauss.

A. pulicarius, Sauss.

Occurs in Pennsylvania and Delaware. It can be added to the list with some doubt—Bruner.

HAPITHUS, Uhl.

H. agitator, Uhl.

OROCHARIS, Uhl.

O. saltator, Uhl.

CECANTHUS, Serv.

Ce. niveus, Serv.

Common all over the State. Caldwell, common—Crane.

Ce. latipennis, Riley.

I have never taken a specimen of this.

Ce. fasciatus, Fitch.

Newark, not rare—Smith.

Ce. angustipennis, Fitch.

Ce. bipunctatus, De G.

Mr. Bruner does not give these three species. Mr. Davis records them all from Staten Island. I have myself taken them in New Jersey.

Family LOCUSTIDÆ.

CEUTOPHILUS, Scudd.

C. maculatus, Harris.

September—Davis.

C. lapidicolus, Scudd.

Caldwell, common—Crane.

C. uhleri, Scudd.

C. gracilipes, Hald.

OYRTOPHYLLUS, Burm.

O. concavus, Harr.

The well-known katydid. It is heard in August all over the State. Caldwell, common—Crane.

AMBLYCORYPHA, Stal.

A. oblongifolia, De G.

Newark.

A. rotundifolia, Scudd.

Both of these are found on Staten Island, in August—Davis.

A. uhleri, Bruner.

MICROCENTRUM, Scudd.

M. laurifolium, Linn.

M. retinervis, Burm.

Common on cranberry bogs. Does considerable damage by eating into berries.

SCUDDERIA, Stal.

S. furculata, Bruner.

Caldwell, common—Crane. Jamesburg, on cranberry bogs—Smith.

S. pistillata, Bruner.

S. angustifolia, Harr.

S. curvicauda, De G.

Caldwell, common—Crane. August 6th—Davis. Jamesburg, on cranberry bogs—Smith.

S. furcata, Bruner.

Jamesburg, on cranberry bogs—Smith.

CONOCEPHALUS, Thunb.

C. ensiger, Harr.

July 9th, on Staten Island—Davis.

C. exilicanorus, Davis.

In salt meadows, on *Spartina*—Davis.

C. robustus, Scudd.

Staten Island, in August—Davis.

C. retusus, Scudd.

Caldwell, rare—Crane. This is not on Mr. Bruner's list.

C. dissimilis, Serv.

This is not on Mr. Bruner's list. Mr. Davis records it from Staten Island, in August, and it is very certain to occur with us.

ORCHELIMUM, Serv.

O. vulgare, Harr.

Staten Island, in July—Davis. Newark, Sandy Hook, Jamesburg—Smith. Common on cranberry bogs.

O. glaberrimum, Burm.

Caldwell, common—Crane.

O. concinnum, Scudd.

Staten Island, in July—Davis.

O. agile, De G.

XIPHIDIUM, Serv.

X. fasciatum, De G.

Caldwell, rare—Crane. Staten Island, in August—Davis.
Common at Jamesburg, on cranberry bogs—Smith.

X. brevipenne, Scudd.

Jamesburg, common on cranberry bogs—Smith.

X. saltans, Scudd. (?)

X. strictum, Scudd. (?)

THYREONOTUS, Serv.

T. dorsalis, Burm.

T. pachymerus, Burm.

Family ACRIDIDÆ.

OPOMALA, Serv.

O. brachyptera, Scudd.

TRUXALIS, Linn.

T. brevicornis, Linn.

SYRBULA, Stal.

S. admirabilis, Uhl.

This has been found in Delaware and in Pennsylvania, and will probably be found also in New Jersey—Bruner.

CHRYSOCHRAON, Scudd.

C. viridis, Scudd.

I have taken this in Ocean and Monmouth counties, on cranberry bogs—Smith.

STETHEOPHYMA, Fisher.

S. lineata, Scudd.

CHLOÆALTIS, Harr.

C. conspersa, Harr.

C. punctulata, Scudd.

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C. curtipennis, Harr.

Caldwell, common—Crane.

STENOBOTHRUS, Fischer.

S. maculipennis, Scudd.

Ocean Grove, not common—Crane. I also found this on cranberry bogs.

S. æqualis, Scudd.

Jamesburg, on cranberry bogs. Sandy Hook—Smith.

Var. bilineatus, Scudd.

S. propinquum, Scudd.

Caldwell, not common—Crane. This species is not on Mr. Bruner's list.

GOMPHOCERUS, Thunb.

G. carinatus, Scudd.

Taken in Pennsylvania and Delaware, and will probably be found in New Jersey—Bruner.

PAROXYA, Scudd.

P. atlantica, Scudd.

Newark, Anglesea, Jamesburg, on cranberry bogs—Smith.

P. recta, Scudd.

Jamesburg, on cranberry bogs—Smith.

P. floridana, Thos.

Caldwell, not common—Crane. This is not on Mr. Bruner's list.

PEZOTETTIX, Burm.

P. scudderi, Uhl.

P. edax, Sauss.

Caldwell, not common—Crane. This is not on Mr. Bruner's list.

MELANOPLUS, Stal.

M. femur-rubrum, De G.

Common everywhere in the State.

M. atlanis, Riley.

M. bivittatus, Say.

Caldwell, common—Crane. Common also on cranberry bogs in Ocean and Monmouth counties.

M. collinus, Scudd.

M. punctulatus, Uhl.

I have taken this on cranberry bogs in Ocean county.

ACRIDIDIUM, Burm.

A. alutaceum, Harr.

Caldwell, common—Crane. Common on cranberry bogs.

A. rubiginosum, Harr.

A. obscurum, Burm.

Newark, Caldwell—Crane.

SCHISTOCERCA, Stal.

S. americana, Dru.

Mr. Davis records this from Staten Island in November.
Newark—Angleman.

CHORTOPHAGA, Sauss.

C. viridifasciata, De G.

Var. virginiana, Fabr.

Var. radiata, Harr.

Var. infuscata, Harr.

Caldwell, common—Crane. This insect in all its protean forms was very common this spring around and on cranberry bogs. It occurs throughout the State.

ENCOPTOLOPHUS, Scudd.

E. sordidus, Burm.

Caldwell, common—Crane. Newark, New Brunswick—Smith.

ARPHIA, Stal.

A. sulphurea, Fabr.

Caldwell, common—Crane. I have taken this also on cranberry bogs.

A. xanthoptera, Burm.

Caldwell, not common—Crane.

HIPPISCOUS, Sauss.

H. tuberculatus, Beauv.

H. rugosus, Scudd.

Caldwell, rare—Crane.

H. phœnicopterus, Germ.

Caldwell, not common—Crane. New Brunswick—Smith.

PSINIDIA, Stal.

P. fenestralis, Serv.

Taken in August on Staten Island, by Mr. Davis.

P. eucerata, Uhl.

Ocean Grove, common—Crane. Also taken on cranberry bogs. This species is not on Mr. Bruner's list.

TRIMEROTROPIS, Stal.

T. maritima, Harr.

Ocean Grove, not common—Crane. Sandy Hook, in early August. Quite common and very shy.

CIRCOTETTIX, Scudd.

C. verruculatus, Kirby.

SPHARAGEMON, Scudd.

S. æquale, Scudd.

Ocean Grove, common—Crane. I have taken it on cranberry bogs at Jamesburg, not rarely.

S. bolli, Scudd.

Caldwell, not common—Crane.

S. balteatum, Scudd.

Jamesburg, on cranberry bogs.

S. collare, Scudd.

I have taken this on cranberry bogs at Jamesburg. It is not on Mr. Bruner's list.

SCIRTETTIOA, Bruner.

S. marmorata, Harr.

Ocean Grove, not rare—Crane. Jamesburg, rare—Smith.

DISSOSTEIRA, Scudd.

D. carolina, Linn.

Common throughout the State.

BATRICHIDEA, Serv.

B. cristata, Harr.

Caldwell, rare—Crane.

B. carinata, Scudd.

Taken on Staten Island in April, by Mr. Davis.

TETTIGIDEA, Scudd.

T. lateralis, Say.

Taken on Staten Island in April and May, by Mr. Davis.

T. polymorpha, Burm.

Taken by Mr. Davis, on Staten Island, April to August.

TETRIX, Fischer.

T. triangularis, Scudd.

T. ornatus, Say.

Caldwell, common—Crane. April to September—Davis.

T. granulatus, Kirby.

April to September, on Staten Island—Davis.

T. cucullatus, Scudd.

ORDER HEMIPTERA.

Any list of the species of this order must necessarily be largely tentative. There is not a single special collection of Hemiptera in the State, and few of the collectors ever pick up a specimen except where they mistake it for a beetle. The describers of species have therefore derived little of their material from this State, and seldom quote New Jersey among the localities. The result is that the list must be made up of those species known to occur on all sides of the State, and which may be therefore reasonably expected to be found with us. Mr. Crane's list and the few species taken by myself are the only positive records.

SUB-ORDER HETEROPTERA.

In this sub-order Uhler's Check List (Brooklyn, New York, 1886,) has been my guide, and I have included those species which are quoted from the United States generally, from the Atlantic States, and from the Eastern States, the latter term including the Middle States, in Mr. Uhler's nomenclature.

Family SCUTELLERIDÆ.

HOMÆMUS, Dallas.

H. grammicus, Wolff.

H. æneifrons, Say.

CAMIRUS, Stal.

C. porosus, Germ:

ACANTHOLOMA, Stal.

A. denticulata, Stal.

EURYGASTER, Lap.

E. alternatus, Say.

Family CORIMELÆNIDÆ.**CORIMELÆNA, White.**

- C. atra**, Am. & Serv.
C. nitiduloides, Wolff.
Caldwell, not common—Crane.
C. lateralis, Fabr.
C. pulicaria, Germ.
C. marginella, Dall.
-

Family CYDNIDÆ.**PANGÆUS, Stal.**

- P. bilineatus**, Say.

MELANÆTHUS, Uhl.

- M. robustus**, Uhl.
M. picinus, Uhl.
M. uhleri, Sign.

AMNESTUS, Dall.

- A. spinifrons**, Say.
A. pusillus, Uhl.

LOBONOTUS, Uhl.

- L. anthracinus**, Uhl.

CANTHOPHORUS, Muls. et Rey.

- C. cinctus**, Beauv.
-

Family PENTATOMIDÆ.**Sub-Family ASOPINÆ.****PERILLUS, Stal.**

- P. circumcinctus**, Stal.
P. exaptus, Say.

RHACOGNATHUS, Fieb.

R. americanus, Stal.

ZICRONA, Am. et Serv.

Z. cuprea, Dall.

PODISUS, H-S.

P. cynicus, Say.

P. placidus, Uhl.

P. serieventris, Uhl.

P. spinosus, Dall.

Caldwell, common—Crane.

P. modestus, Dall.

P. bracteatus, Fitch.

P. politus, Uhl.

LIOTROPIS, Uhl.

L. humeralis, Uhl.

Sub-Family HALYDINÆ.

PODOPS, Lap.

P. cinctipes, Say.

BROCHYMENA, Am. et Serv.

B. arborea, Say.

Caldwell, common—Crane.

B. quadripustulata, Fabr.

B. annulata, Fabr.

B. laticornis, Say.

Sub-Family PENTATOMINÆ.

ÆLIA, Fabr.

A. americana, Dall.

NEOTTIGLOSSA, Kirby.

N. undata, Say.

N. trilineata, Kirby.

COSMOPEPLA, Stal.

C. carnifex, Fabr.

Caldwell, rare—Crane.

CEBALUS, Stal.

Ce. pugnax, Fabr.

MORMIDEA, Am. et Serv.

M. lugens, Fabr.

Caldwell, rare—Crane.

EUCHISTUS, Dall.

E. fissilis, Uhl.

E. servus, Say.

E. tristigmus, Say.

Caldwell, rare—Crane.

E. variolaris, Pal. Beauv.

Caldwell, common—Crane.

E. ictericus, Linn.

CÆNUS, Dall.

C. delius, Say.

HYMENAROYS, Am. et Serv.

H. æqualis, Say.

H. nervosa, Say.

MENECLES, Stal.

M. insertus, Say.

LIODERMA, Uhl.

L. senilis, Say.

L. belfragii, Stal.

L. ligata, Say.

Caldwell, rare—Crane.

TRICHOPEPLA, Stal.

T. semivittata, Say.

T. atricornis, Stal.

PERIBALUS, Muls.

P. limbolaris, Stal.

THYANTA, Stal.

T. custator, Fabr.

NEZARA, Am. et Serv.

N. pennsylvanica, De G.

Caldwell, common—Crane.

N. hilaris, Say.

I have taken a few specimens of this.

BANASA, Stal.

B. dimidiata, Say.

B. calva, Say.

Sub-Family ACANTHOSOMINÆ.

ACANTHOSOMA, Curt.

A. cruciata, Say.

A. lateralis, Say.

A. nebulosa, Kirby.

Family COREIDÆ.

CHARIESTERUS, Lap.

C. antennator, Fabr.

CORYNOCORIS, Mayr.

C. typhæus, Fabr.

C. distinctus, Dall.

ARCHIMERUS, Burm.

A. calcarator, Fabr.

EUTHOOTHIA, Mayr.

E. galeator, Fabr.

METAPODIUS, Westw.

M. femoratus, Fabr.

Caldwell, not common—Crane.

M. terminalis, Dall.

LEPTOGLOSSUS, Guer.

L. oppositus, Say.

L. corculus, Mayr.

ANASA, Am. et Serv.

A. tristis, De G.

The "Squash Bug." Common all over the State. Caldwell—Crane.

ALYDUS, Fabr.

A. calcaratus, Fabr.

A. eurinus, Say.

Caldwell, common—Crane.

A. pilosulus, H-S.

A. quinquespinosus, Say.

A. rufipes, Westw.

PROTENOR, Stal.

P. belfragei, Hagl.

Family BERYTIDÆ.**NEIDES, Latr.**

N. muticus, Say.

JALYSUS, Stal.

J. spinosus, Say.

Caldwell, not common—Crane.

HARMOSTES, Burm.

H. reflexulus, Stal.

Caldwell, rare—Crane.

H. fraterculus, Say.

H. obliquus, Say.

CORIZUS, Fall.

C. lateralis, Say.

C. punctipennis, Dall.

C. novæ-boracensis, Sign.

C. nigristernum, Sign.

C. sidæ, Fabr.

Caldwell, rare—Crane.

Family LYGÆIDÆ.

NYSIUS, Dall.

N. angustatus, Uhl.

ORSILLACIS, Uhl.

O. producta, Uhl.

BELONOOHILUS, Uhl.

B. numenius, Say.

ORSILLUS, Dall.

O. scolopax, Say.

ISCHNORHYNCHUS, Fieb.

I. didymus, Zett.

CYMUS, Hahn.

C. luridus, Stal.

C. angustatus, Stal.

BLISSUS, Burm.

B. leucopterus, Say.

The "Chinch Bug." Caldwell, rare—Crane.

GEOCORIS, Fall.

G. fuliginosus, Say.

Caldwell, not common—Crane.

G. limbatus, Stal.

G. griseus, Dall.

G. borealis, Dall.

GEDANOALA, Am. et Serv.

G. dorsalis, Say.

CROPHIUS, Stal.

C. disconotus, Say.

LIGYROCORIS, Stal.

L. sylvestris, Linn.

L. constrictus, Say.

MYODOCHA, Latr.

M. serripes, Oliv.

HERÆUS, Stal.

H. plebejus, Stal.

H. insignis, Uhl.

PAMERA, Say.

P. basalis, Dall.

P. vicina, Dall.

PTOCHIOMERA, Say.

P. nodosa, Say.

ONEMODUS, H-S.

O. mavortius, Say.

TRAPEZONOTUS, Fieb.

T. nebulosus, Fall.

T. rufipes, Stal.

EMBLETHIS, Fieb.

E. arenarius, Linn.

PERITRECHUS, Fieb.

P. fraternus, Uhl.

GONIANOTUS, Fieb.

G. marginepunctatus, Wolff.

EREMOCORIS, Fieb.

E. ferus, Say.

MICROTOMA, Lap.

M. carbonaria, Rossi.

MEGALONOTUS, Fieb.

M. unus, Say.

THAUMASTOPUS, Fitch.

T. alacris, Walk.

PELIOPELTA, Uhl.

P. abbreviata, Uhl.

MELANOCORYPHUS, Stal.

M. bicrucis, Say.

LYGÆUS, Fabr.

L. kalmii, Stal.

L. turcicus, Fabr.

Caldwell, common—Crane.

ONCOPELTUS, Stal.

O. fasciatus, Dall.

Caldwell, not common—Crane.

Family PYRRHOCORIDÆ.

LARGUS, Hahn.

L. succinctus, Linn.

Family CAPSIDÆ.**BRACHYTROPIS, Fieb.**

B. calcarata, Fall.

TRIGONOTYLUS, Fieb.

T. ruficornis, Fall.

MIRIS, Fabr.

M. affinis, Reut.

M. dorsalis, Say.

LEPTOTERNA, Fieb.

L. dolobrata, Linn.

RESTHENIA, Spin.

R. insitiva, Say.

R. nigricollis, Reut.

R. insignis, Say.

R. circumcincta, Say.

LOPIDEA, Uhl.

L. media, Say.

L. confluens, Say.

PHYTOCORIS, Fabr.

P. eximius, Reut.

P. puella, Reut.

P. pallidicornis, Reut.

P. scrupeus, Say.

P. colon, Say.

NEUROCOLPUS, Reut.

N. nubilus, Say.

N. inops, Say.

COMPSOCEROCORIS, Reut.

C. annulicornis, Reut.

DICHOOSCYTUS, Fieb.

D. rufipennis, Fall.

CALOCORIS, Fieb.

- C. rapidus*, Say.
C. bipunctatus, Fabr.

MEGACCELUM, Fieb.

- M. fasciatum*, Uhl.
M. grossum, Uhl.

ONCOGNATHUS, Fieb.

- O. binotatus*, Fabr.

LYGUS, Hahn.

- L. pabulinus*, Linn.
L. lucorum, Meyer.
L. pratensis, Linn.
L. belfragii, Reut.
L. invitus, Say.
L. chlorionis, Say.

CACCOBAPHES, Uhl.

- C. sanguinarius*, Uhl.

TROPIDOSTEPTES, Uhl.

- T. cardinalis*, Uhl.

PŒCIOLOSCYTUS, Fieb.

- P. basalis*, Reut.
P. imbecillus, Say.
P. geminus, Say.

PŒCIOLOCAPSUS, Reut.

- P. lineatus*, Fabr.

Common throughout the State. Caldwell, common—Crane.

- P. goniphorus*, Say.
P. affinis, Reut.
P. marginalis, Reut.

CAMPTOBROCHIS, Fieb.

- C. nebulosus*, Uhl.
C. grandis, Uhl.

DERÆOCORIS, Kirsch.

D. capillaris, Fabr.

CAPSUS, Fabr.

C. ater, Linn.

PAMEROCORIS, Uhl.

P. anthocoroides, Uhl.

MONALOCORIS, Dahl.

M. filicis, Linn.

BRYOCORIS, Fall.

B. pteridis, Fall.

HYALIODES, Reut.

H. vitripennis, Say.

STHENAROPS, Uhl.

S. chloris, Uhl.

S. malinus, Uhl.

ILNACORA, Reut.

I. stalii, Reut.

PILOPHORUS, Hahn.

P. bifasciatus, Fabr.

P. confusus, Kirsch.

P. walshii, Uhl.

MALACOCORIS, Fieb.

M. irroratus, Say.

GLOBIOEPS, Latr.

G. flavomaculatus, Fabr.

NABIDEA, Uhl.

N. coracina, Uhl.

EUCEROCORIS, Westw.

E. guttulatus, Uhl.

GARGANUS, Stal.

G. fusiformis, Say.

STIPHROSOMA, Fieb.

S. stygica, Say.

HALTIQUS, Burm.

H. bractatus, Say.

IDOLOCORIS, D. & Sc.

I. famelicus, Uhl.

ORECTODERUS, Uhl.

O. obliquus, Uhl.

OYLAPUS, Say.

O. tenuicornis, Say.

ONCOTYLUS, Fieb.

O. decolor, Fall.

RHINACLOA, Reut.

R. forticornis, Reut.

PSALLUS, Fieb.

P. delicatus, Uhl.

EPISCOPUS, Reut.

E. ornatus, Reut.

Not rare in Ocean county.

PLAGIOGNATHUS, Fieb.

P. grandis, Reut.

P. obscurus, Uhl.

AGALLIASTES, Fieb.

A. verbasci, H-S.

Family ACANTHIIDÆ.

LYCTOCORIS, Hahn.

L. fitchii, Reut.

L. americanus, Dall.

TRIPHLEPS, Fieb.

T. insidiosus, Say.

Common on grasses throughout the State.

CARDIASTETHUS, Fieb.

C. luridellus, Fieb.

C. pergandei, Reut.

ANTHOCORIS, Say.

A. musculus, Say.

A. antevolens, White.

ACANTHIA, Fabr.

A. lectularia, Linn.

The "Bed Bug." Found throughout the State. Caldwell,
common—Crane.

Family TINGITIDÆ.**PIESMA, St. Farg. et Serv.**

P. cinerea, Say.

CORYTHUCA, Stal.

C. ciliata, Say.

C. juglandis, Fitch.

LEPTOSTYLA, Stal.

L. oblonga, Say.

L. tabida, H-S.

PHYSATOCHILA, Fieb.

P. plexa, Say.

LEPTOYPHA, Stal.

L. mutica, Say.

TINGIS, Fabr.

T. clavata, Stal.

T. lurida, Stal.

T. uniformis, Stal.

TELEONEMIA, Costa.

T. elongata, Uhl.

Family ARADIDÆ.

ARADUS, Fabr.

A. æqualis, Say.

A. similis, Say.

A. acutus, Say.

A. quadrilineatus, Say.

A. rectus, Say.

A. tuberculifer, Kirby.

A. affinis, Kirby.

A. inornatus, Uhl.

BRAOYRHYNCHUS, Lap.

B. granulatus, Say.

B. simplex, Uhl.

ANEURUS, Curt.

A. inconstans, Uhl.

A. simplex, Uhl.

Family PHYMATIDÆ.

PHYMATA, Latr.

P. wolffi, Stal.

P. erosa, Guer.

Common throughout the State in my experience. Caldwell—
Crane.

MACROCEPHALUS, Swed.

M. cimicoides, Swed.

Family NABIDÆ.**NABIS, Latr.**

N. fusca, Stein.

PAGASA, Stal.

P. nitida, Stal.

CORISCOUS, Schrank.

C. subcoleoptratus, Kirby.

C. pallescens, Reut.

C. annulatus, Reut.

C. rufusculus, Reut.

C. ferus, Linn.

Caldwell, common—Crane.

C. kalmii, Reut.

C. roseipennis, Reut.

C. punctipes, Reut.

C. propinquus, Reut.

C. vicarius, Reut.

Family REDUVIIDÆ.**SINEA, Am. et Serv.**

S. diadema, Fabr.

Caldwell, common—Crane.

ACHOLLA, Stal.

A. multispinosa, De G.

PRIONIDUS, Uhl.

P. cristatus, Linn.

A southern species, taken at Sandy Hook, in August. Common at Jamesburg—Angleman. I have also taken it there.

MILYAS, Stal.

M. cinctus, Fabr.

Caldwell, rare—Crane.

APIOMERUS, Hahn.

A. crassipes, Fabr.

MELANOLESTES, Stal.

M. picipes, H-S.

M. abdominalis, H-S.

Caldwell, rare—Crane.

OPSICÆTUS, Klug.

O. personatus, Linn.

PYGOLAMPIS, Germ.

P. sericea, Stal.

ONCEROTRACHELUS, Stal.

O. acuminatus, Say.

Family EMESIDÆ.

EMESA, Fabr.

E. longipes, De G.

Caldwell, common—Crane.

BARCE, Stal.

B. annulipes, Stal.

B. simplicipes, Uhl.

GERASCOPUS, Heinek.

O. errabundus, Say.

Family LIMNOBATIDÆ.

• LIMNOBATES, Burm.

L. lineata, Say.

Family HYDROBATIDÆ.

HYGROTRECHUS, Stal.

H. remigis, Say.

H. conformis, Uhl.

LIMNOTRECHUS, Stal.

L. marginatus, Say.

LIMNOPORUS, Stal.

L. rufoscutellatus, Latr.

STEPHANIA, White.

S. picta, H-S.

METROBATES, Uhl.

M. hesperius, Uhl.

Family VELIIDÆ.

HEBRUS, Curtis.

H. americanus, Uhl.

H. pusillus, Burm.

MESOVERLIA, Muls.

M. bisignata, Uhl.

RHAGOVERLIA, Mayr.

R. obesa, Uhl.

Family SALDIDÆ.

SALDA, Fabr.

- S. ligata**, Say.
 - S. confluens**, Say.
 - S. pellita**, Uhl.
 - S. sphacelata**, Uhl.
 - S. coreacea**, Uhl.
 - S. anthracina**, Uhl.
 - S. littoralis**, Linn.
 - S. lugubris**, Say.
 - S. deplanata**, Uhl.
 - S. interstitialis**, Say.
 - S. reperta**, Uhl.
 - S. orbiculata**, Uhl.
 - S. humilis**, Say.
 - S. saltatoria**, Linn.
 - S. separata**, Uhl.
-

Family GALGULIDÆ.

PELOGONUS, Latr.

- P. americanus**, Uhl.

GALGULUS, Latr.

- G. oculatus**, Fabr.
Caldwell, rare—Crane.
-

Family NAUCORIDÆ.

PELOCORIS, Stal.

- P. femorata**, Pal. Beauv.

Family BELOSTOMATIDÆ.**ZAITHA**, Am. et Serv.**Z. fluminea**, Say.**Z. aurantiacum**, Leidy.**BELOSTOMA**, Auct.**B. americanum**, Leidy.

Caldwell, common—Crane.

BENACUS, Stal.**B. griseus**, Say.

Family NEPIDÆ.**NEPA**, Fabr.**N. apiculata**, Uhl.

Caldwell, common—Crane.

RANATRA, Fabr.**R. fusca**, Pal. Beauv.

Caldwell, common—Crane.

Family NOTONECTIDÆ.**NOTONECTA**, Linn.**N. insulata**, Kirby.**N. undulata**, Say.

Caldwell, not common—Crane.

N. irrorata, Uhl.**N. punctata**, Fieb.

ANISOPS, Spin.

A. platycnemis, Fieb.

PLEA, Leach.

P. striola, Fieb.

Family CORISIDÆ.

CORISA, Geoff.

C. calva, Say.

Caldwell, common—Crane.

C. tarsalis, Fieb.

O. signata, Fieb.

C. hieroglyphica, Duf.

O. verticalis, Fieb.

O. burmeisteri, Fieb.

O. interrupta, Say.

O. erichsonii, Fieb.

O. limitata, Fieb.

O. stigmatica, Fieb.

O. alternata, Say.

O. harrisii, Uhl.

O. kennicottii, Uhl.

SUB-ORDER HOMOPTERA.

In this sub-order, Mr. W. H. Ashmead kindly furnished the material. I know of absolutely no published list that would have been useful, and Mr. Ashmead's contribution is therefore an extremely valuable one. I have made but few additions to the list, and have added only Mr. Crane's records, and some notes of my own on species taken or observed by me. Mr. Ashmead is therefore authority for the entire list except for these few comments.

Mr. Ashmead suggests that the list will be very much enlarged in the *Aphididæ* and *Coccidæ*, and the same is probably true of all other families in the sub-order.

Family CICADIDÆ.

Sub-Family CICADINÆ.

TETTIGIA, Am. et Serv.

T. hieroglyphica, Say.

TIBICEUS, Latr.

T. septendecim, Linn.

The "Seventeen-year Locust" or "Periodical Cicada." Occurs at intervals in all parts of the State.

CICADA, Linn.

C. auletus, Germ.

C. variegatus, Fabr.

C. striatipes, Hald.

C. pruinosa, Say.

Caldwell, common—Crane. The "Dog-day Harvest Fly."
Common throughout the State.

Family FULGORIDÆ.

Sub-Family ACONONINÆ.

ACONONIA, Am. et Serv.

A. serveillei, Spin.

CHLOROCHARA, Stal.

C. vivida, Fabr.

Sub-Family FLATINÆ.

ORMENIS, Stal.

O. pruinosa, Say.

Caldwell, rare—Crane. I have found it not uncommon near
New Brunswick.

FLATA, Fabr.

F. conica, Say.

PÆCILOPTERA, Latr.

P. nova, Say.

P. septentrionalis, Spin.

Caldwell, common—Crane.

AMPHISCEPA, Germ.

A. bivittata, Say.

I have taken this, not rarely, in the sweep net.

Sub-Family ISSINÆ.

ISSUS, Fabr.

I. aciculatus, Uhl.

BRUCHOMORPHA, Newn.

B. oculata, Newn.

NASO, Fitch.

N. robertsonii, Fitch.

Sub-Family CALOSCELINÆ.

PHYLLOSCELIS, Germ.

P. atra, Germ.

P. pallescens, Germ.

Sub-Family DITYOPHORINÆ.**SCOLOPS, Schaum.**

S. sulcipes, Say.

I have taken this, not frequently, in Ocean county.

MONOPSIS, Spin.

M. tabida, Spin.

Sub-Family FULGORINÆ.**OALYPTOPROCTUS, Spin.**

O. (?) elegans, Oliv.

Sub-Family CIXIINÆ.**OTIOCERUS, Kirby.**

O. coquerbertii, Kirby.

O. degeerii, Kirby.

O. signoretii, Fitch.

O. stollii, Kirby.

O. wolffi, Kirby.

ANOTIA, Kirby.

A. bonnellii, Kirby.

A. robertsonii, Fitch.

A. westwoodii, Fitch.

CIXIUS, Latr.

C. cinctifrons, Fitch.

C. coleopenne, Fitch.

C. albicincta, Germ.

C. impunctatus, Fitch.

C. pini, Fitch.

- C. 5-lineatus, Stal.
 - C. stigmatus, Say.
 - C. vicarius, Walk.
-

Sub-Family DELPHACINÆ.

DELPHAX, Fabr.

- D. annulata, Fitch.
 - D. albipes, Fitch.
 - D. arvensis, Fitch.
 - D. bicolor, Fitch.
 - D. dorsalis, Fitch.
 - D. tricarinata, Say.
-

Family MEMBRACIDÆ.

Sub-Family CENTROTINÆ.

MICROCENTRUS, Stal.

- M. caryæ, Fitch.
-

Sub-Family MEMBRACINÆ.

ENCHENOPA, Am. et Serv.

- E. curvata, Fabr.
Caldwell, common—Crane. Common throughout the State.
 - E. binotata, Say.
Caldwell, common—Crane.
-

Sub-Family HOPLOPHORINÆ.

PLATYCOTIS, Stal.

- P. quadrivittata, Say.
Caldwell, common—Crane.
- P. vittata, Fabr.

Sub-Family SMILIINÆ.

STICTOCEPHALA, Stal.

S. inermis, Fabr.

S. festina, Say.

CERESA, Am. et Serv.

C. brevicornis, Fitch.

C. bubulus, Fabr.

Caldwell, common—Crane. Common throughout the State.

C. diceros, Say.

Caldwell, rare—Crane.

EUTYLIA, Burm.

E. sinuata, Fabr.

PUBLILIA, Stal.

P. concava, Say.

SMILIA, Germ.

S. camelus, Fabr.

S. vau, Say.

S. vittata, Am. et Serv.

CYRTOSIA, Fitch.

C. fenestrata, Fitch.

C. marmorata, Say.

THELIA, Am. et Serv.

T. acuminata, Linn.

T. belligera, Say.

T. bimaculata, Fabr.

Caldwell, not common—Crane.

T. cratægi, Fitch.

T. quercus, Fitch.

T. univittata, Harris.

TELAMONA, Fitch.

T. ampelopsidis, Harr.

Caldwell, rare—Crane.

T. concava, Fitch.

T. coryli, Fitch.

T. fagi, Fitch.

T. querci, Fitch.

T. reclinata, Fitch.

T. tristis, Fitch.

T. unicolor, Fitch.

ARCHASIA, Stal.

A. galeator, Fabr.

Sub-Family DARNINÆ.

OPHIDERMA, Fairm.

O. arcuata, Say.

O. mera, Say.

O. salamandra, Fairm.

Family CERCOPIDÆ.

Sub-Family CERCOPINÆ.

MONEOPHORA, Am. et Serv.

M. bicincta, Say.

Sub-Family APHROPHORINÆ.

LEPYRONIA, Am. et Serv.

L. quadrangularis, Say.

Caldwell, not common—Crane.

APHROPHORA, Germ.

- A. parallela**, Say.
A. quadrinotata, Say.

PHILÆNUS, Stal.

- P. bilineatus**, Say.
P. lineatus, Linn.
P. sarogotensis, Fitch.
P. spumaria, Germ.

CLOSTOPTERA, Germ.

- C. achatina**, Germ.
C. pini, Fitch.
C. proteus, Fitch.
C. obtusa, Say.
C. testacea, Fitch.
Caldwell, common—Crane.
C. xanthocephala, Germ.
-

Sub-Family LEDRINÆ.**LEDRA, Fabr.**

- L. perdita**, Am. et Serv.
-

Sub-Family GLYPONINÆ.**XEROPHLCÆA, Germ.**

- X. viridis**, Fabr.

GLYPONA, Germ.

- G. flavilineata**, Fitch.
G. octolineata, Say.
G. scarlatina, Fitch.

PAROPHOLIS, Uhl.

P. peltata, Uhl.

PENTHIMIA, Germ.

P. atra, Fabr.

P. americana, Fitch.

Sub-Family TETTIGONINÆ.

PROCONIA, Serv.

P. costalis, Fabr.

ONCOMETOPIA, Stal.

O. obtusa, Fabr.

O. orbona, Fabr.

O. undata, Fabr.

Of this latter I have taken a few specimens.

HOMALODISCA, Stal.

H. coagulata, Say.

AULACIZES, Am. et Serv.

A. irrorata, Fabr.

DIEDROCEPHALA, Spin.

D. coccinea, Först.

D. flaviceps, Riley.

D. mollipes, Say.

Caldwell, not common—Crane. I have found it generally distributed and quite common.

HELOCHARA, Fitch.

H. communis, Fitch.

Caldwell, common—Crane.

EVACANTHUS, Serv.

E. orbitalis, Fitch.

TETTIGONIA, Fabr.

- T. bifida*, Say.
T. trifasciata, Say.
T. tripunctata, Fitch.
-

Sub-Family ACOCEPHALINÆ.**ACOCEPHALA, Germ.**

- A. solidaginis*, Harr.

HECALUS, Stal.

- H. fenestratus*, Uhl.

PARABOLOCRATUS, Fieb.

- P. viridis*, Uhl.

SELENOCEPHALUS, Germ.

- S. vitillinus*, Fitch.

PLATYMETOPIUS, Burm.

- P. acutus*, Say.
P. albonotatus, Fitch.
-

Family BYTHOSCOPIDÆ.**PEDIOPSIS, Burm.**

- P. trimaculatus*, Fitch.
P. viridis, Fitch.

BYTHOSCOPIUS, Germ.

- B. pallidus*, Fitch.
B. seminudus, Say.

AGALLIA, Curt.

- A. sanguinolenta*, Prov.
A. quadripunctata, Prov.

Common on cranberry bogs in Burlington and Monmouth counties.

IDIOCERUS, Lewis.

I. alternata, Fitch.

I. lachrymalis, Fitch.

I. maculipennis, Fitch.

I. suturalis, Fitch.

Family JASSIDÆ.

Sub-Family JASSINÆ.

CÆLIDEA, Germ.

C. olitoria, Say.

C. subbifasciata, Say.

Caldwell, rare—Crane.

ATHYSANUS, Burm.

A. fenestratus, Fitch.

A. minor, Fitch.

A. nigrinasi, Fitch.

A. variabilis, Fitch.

A. striatulus, Fallen.

Common on cranberry bogs everywhere.

JASSUS, Fabr.

J. clitellarius, Say.

Caldwell, common—Crane.

J. irroratus, Say.

Caldwell, common—Crane.

J. inimicus, Say.

J. unicolor, Fitch.

DELTOCEPHALUS, Burm.

D. sayi, Fitch.

ERYTHRONEURA, Fitch.**E. comes**, Say.**E. vitis**, Harris.

The common leaf hopper of the Grape.

E. vulnerata, Fitch.**EMPOA, Fitch.****E. querci**, Fitch.**E. rosæ**, Harris.**E. fabæ**, Harris.**Sub-Family TYPHLOCIBINÆ.****TYPHLOCYBA, Germ.****T. affinis**, Fitch.**T. tricineta**, Fitch.**Family PSYLLIDÆ.****Sub-Family LIVIINÆ.****LIVIA, Latr.****L. maculipennis**, Fitch.**L. vernalis**, Fitch.**Sub-Family APHALARINÆ.****APHALARA, Först.****A. ilicis**, Ashm.**Sub-Family PSYLLINÆ.****CALOPHYA, Lw.****C. nigripennis**, Riley.On *Rhus* sp.; quite common.

PSYLLA, Geoffr.

P. annulata, Fitch.

P. carpini, Fitch.

P. quadrilineata, Fitch.

PACHYPSYLLA, Riley.

P. celtidis-mama, Riley.

P. venusta, O. S.

BLASTOPHYSA, Riley.

B. c-gemma, Riley.

Sub-Family TRIOZINÆ.

TRIOZA, Först.

T. diospyri, Ashm.

T. tripunctata, Fitch.

Family APHIDIDÆ.

Sub-Family APHIDINÆ.

SIPHONOPHORA, Koch.

S. asclepiadis, Fitch.

S. liriodendris, Mon.

S. pisi, Kalt.

S. rudbeckiæ, Fitch.

S. rosæ, Linn.

S. rubi, Kalt.

S. sonchi, Linn.

S. salicicola, Thos.

S. viticola, Thos.

PHORODON, Pass.**P. humuli**, Schrank.

The hop plant-louse. Occurs wherever Hop and Plum grow.

RHOPALOSIPHUM, Koch.**R. berberidis**, Fitch.**MEGOURA, Buckt.****M. solani**, Thos.**MYZUS, Pass.****M. cerasi**, Fabr.**DREPANOSIPHUM, Koch.****D. quercifolii**, Walsh.**APHIS, Linn.****A. brassicæ**, Linn.

The cabbage plant-louse. Common everywhere.

A. cornifoliæ, Fitch.**A. cratægeifoliæ**, Fitch.**A. diospyri**, Thos.**A. mali**, Fabr.**A. malifoliæ**, Fitch.**A. maidis**, Fitch.**A. pinicolens**, Fitch.**A. pruni**, Koch.**A. prunifoliæ**, Fitch.**A. rumicis**, Linn.**A. salicicola**, Thos.**A. sambuci**, Linn.**A. sambucifoliæ**, Fitch.**Sub-Family CALLIPTERINÆ.****MONELLIA, Oestl.****M. caryella**, Fitch.

CALLIPTERUS, Koch.

C. betulæcolens, Fitch.

C. castaneæ, Fitch.

Sub-Family LACHNINÆ.

LACHNUS, Burm.

L. abietis, Fitch.

L. alnifolii, Fitch.

L. laricifex, Fitch.

L. quercifoliæ, Fitch.

L. strobis, Fitch.

L. salicelis, Fitch.

PHYLLAPHIS, Koch.

P. fagi, Linn.

Sub-Family SCHIZONEURINÆ.

SCHIZONEURA, Hart.

S. americana, Riley.

S. imbricator, Fitch.

S. lanigera, Hausm.

S. strobis, Fitch.

S. ulmi, Linn.

S. tessellata, Fitch.

GLYPHINA, Koch.

G. ulmicola, Fitch.

VACUNA, Heyd.

V. spinosus, Shimer.

Sub-Family PEMPHIGINÆ.

PEMPHIGUS, Hart.

- P. populicaulis*, Fitch.
 - P. populiglobuli*, Fitch.
 - P. populivenæ*, Fitch.
 - P. rhois*, Fitch.
-

Sub-Family CHERMESINÆ.

CHERMES, Linn.

- C. laricifoliæ*, Fitch.
 - C. pinifoliæ*, Fitch.
-

Sub-Family PHYLLOXERINÆ

PHYLLOXERA, Fonsc.

- P. caryæ-caulis*, Fitch.
 - P. caryæ-foliæ*, Fitch.
 - P. caryæ-venæ*, Fitch.
 - P. vastatrix*, Planch.
-

Family ALEURODIDÆ.

ALEURODES, Am. et Serv.

- A. abutilonea*, Hald.
 - A. brassicæ*, Walk.
 - A. corni*, Hald.
-

Family COCCIDÆ.

Sub-Family COCCINÆ.

DACTYLOPIUM, Costa.

- D. adonidum*, Linn.

PSEUDOCOCOUS, Westw.

- P. aceris*, Geoff.

Sub-Family LECANINÆ.

ORTHEZIA, Am. et Serv.

O. americana, Walk.

PULVINARIA, Targ-Toz.

P. innumerabilis, Rathv.

P. vitis, Linn.

LECANIUM, Burm.

L. cerasifex, Fitch.

L. fitchii, Sign.

L. hesperidum, Linn.

L. juglandis, Bouché.

L. persicæ, Fabr.

L. quercicitronis, Fitch.

Sub-Family DIASPINÆ.

ASPIDIOTUS, Bouché.

A. abietis, Comst.

A. ancylus, Putn.

A. betulæ, Bärensp.

A. juglans-regiæ, Comst.

DIASPIS, Bremi.

D. circularis, Fitch.

D. rosæ, Sandb.

LEPIDOSAPHES, Shimer.

L. pomorum, Bouché.

CHIONASPIS, Sign.

C. furfurus, Fitch.

C. pinifolii, Fitch.

C. salicis, Linn.

ORDER NEUROPTERA.**Family TERMITIDÆ.****TERMES, Linn.**

T. flavipes, Koll.

Common throughout the State. Caldwell, common—Crane.

Family PSOCIDÆ.**ATROPOS, Leach.**

A. divinatorius, Fabr.

Is common throughout the State.

PSOCUS, Latr.

P. signatus, Hagen.

P. pumilis, Hagen.

P. venosus, Burm.

P. contaminatus, Hagen.

P. striatus, Walk.

P. quietus, Hagen.

P. madidus, Hagen.

P. salicis, Fitch.

Family PERLIDÆ.**PTERONARCOYS, Newm.**

P. regalis, Newm.

P. nobilis, Hagen.

PERLA, Geoff.

- P. abnormis*, Newn.
- P. arida*, Hagen.
- P. coultonii*, Pictet.
- P. tristis*, Hagen.
- P. capitata*, Pictet.
- P. similis*, Hagen.
- P. xanthenes*, Newn.
- P. occipitalis*, Pictet.
- P. placida*, Hagen.
- P. ephyre*, Newn.

ISOPTERYX, Pictet.

- I. cydippe*, Newn.

CAPNIA, Pictet.

- C. pygmæa*, Burm.

TÆNIOPTERYX, Pictet.

- T. fasciata*, Burm.
Caldwell, common—Crane.
- T. similis*, Hagen.
Caldwell, not common—Crane.
- T. maura*, Pictet.

NEMOURA, Pictet.

- N. albidipennis*, Walk.

LEUCTRA, Stephens.

- L. tenuis*, Pictet.

Family EPHEMERIDÆ.

PALINGENIA, Burm.

- P. bilineata*, Say.
Caldwell, common—Crane.
- P. limbata*, Serv.

EPHEMERA, Linn.**E. decora, Walk.**

Caldwell, common—Crane.

BAËTIS, Leach.**B. vicaria, Walk.****B. obesa, Say.**

Caldwell, not rare—Crane.

B. fusca, Walk.

Caldwell, not rare—Crane.

B. canadensis, Walk.

Caldwell, not common—Crane.

B. noveboracana, Licht.**POTAMANTHUS, Pictet.****P. concinnus, Walk.**

Caldwell, common—Crane.

P. nebulosus, Walk.

Caldwell, rare—Crane.

CLOË, Leach.**C. unicolor, Hagen.****C. vicina, Hagen.**

Caldwell, common—Crane.

CÆNIS, Stephens.**C. amica, Hagen.**

Family ODONATA.**Sub-Family CALOPTERYGINÆ.****CALOPTERYX, Leach.****C. apicalis, Burm.****C. maculata, Beauv.**

Caldwell, common—Crane.

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C. virginica, Dru.

Caldwell, common—Crane.

HETÆRINA, Hagen.

H. americana, Fabr.

H. tricolor, Burm.

Sub-Family AGRIONINÆ.

LESTES, Leach.

L. rectangularis, Say.

Recorded from New Jersey.

L. congener, Hagen.

L. eurina, Say.

L. unguiculata, Hagen.

Recorded from Bergen Hill, New Jersey.

L. hamata, Hagen.

Recorded from Bergen Hill, New Jersey.

AGRION, Fabr.

A. irene, Hagen.

Recorded from New Jersey.

A. iners, Hagen.

New Jersey specimens in Collection American Entomological Society.

A. ramburii, Selys.

Recorded from Bergen Hill, New Jersey.

A. hastatum, Say.

Recorded from Bergen Hill, New Jersey.

A. saucium, Burm.

A. civile, Hagen.

A. violaceum, Hagen.

Recorded from New Jersey.

A. apicale, Say.

A. aspersum, Hagen.

Recorded from Bergen Hill, New Jersey.

Sub-Family GOMPHINÆ.

GOMPHUS, Leach.

G. armatus, Selys.

Caldwell, rare—Crane.

G. adelphus, Selys.

G. fraternus, Say.

G. spicatus, Hagen.

Caldwell, common—Crane.

G. exilis, Selys.

HAGENIUS, Selys.

H. brevistylus, Selys.

CORDULEGASTER, Leach.

C. maculatus, Selys.

C. obliquus, Say.

PETALURA, Leach.

P. thoreyi, Hagen.

Sub-Family ÆSCHNINÆ.

ANAX, Leach.

A. junius, Dru.

Common in Ocean county, and generally distributed in the State. Caldwell, common—Crane.

ÆSCHNA, Fabr.

Æ. clepsydra, Say.

Æ. verticalis, Hagen.

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Æ. constricta, Say.

Caldwell, common—Crane.

Æ. grandis, Linn.

Recorded from Bergen Hill, New Jersey. I have taken it in Ocean county.

Æ. ingens, Ramb.

Æ. heros, Fab.

Recorded from New Jersey. Generally distributed. Caldwell, not common—Crane.

Æ. quadriguttata, Burm.

Caldwell, common—Crane.

Sub-Family CORDULINÆ.

MACROMIA, Ramb.

M. tæniolata, Ramb.

DIDYMOPS, Ramb.

D. transversa, Say.

Mount Holly, New Jersey—Collection American Entomological Society.

D. obsoleta, Say.

CORDULA, Leach.

C. lateralis, Burm.

Sub-Family LIBELLULINÆ.

TRAMEA, Hagen.

T. carolina, Linn.

Recorded from New Jersey.

T. lacerata, Hagen.

I took this in Ocean county during the present season (1889).

OELITHEMIS, Hagen.

O. eponina, Dru.

New Jersey—Collection American Entomological Society.

PLATYTHEMIS, Hagen.

P. trimaculata, De G.

Common throughout the State. Caldwell, common—Crane.

LIBELLULA, Linn.

L. quadrimaculata, Linn.

L. semifasciata, Burm.

Recorded from New Jersey.

L. luctuosa, Burm.

Recorded from New Jersey. Caldwell, common—Crane.

L. pulchella, Dru.

Recorded from New Jersey. Caldwell, common—Crane.

L. auripennis, Burm.

Recorded from New Jersey. Specimens in Collection American Entomological Society.

L. incesta, Hagen.

New Jersey—Collection American Entomological Society.

L. lydia, Dru.

New Jersey—Collection American Entomological Society.

L. quadrupla, Say.

Recorded from New Jersey.

L. plumbea, Uhl.

Recorded from New Jersey.

MESOTHEMIS, Hagen.

M. simplicicollis, Say.

Recorded from New Jersey. Ocean Grove—Crane.

M. longipennis, Burm.

New Jersey—Collection American Entomological Society.

DIPLAX, Charp.

D. costifera, Uhl.

D. vicina, Hagen.

Recorded from Bergen Hill, New Jersey.

D. semicincta, Say.

D. rubicundula, Say.

Recorded from Bergen Hill, New Jersey. Caldwell, common
—Crane.

D. berenice, Dru.

Recorded from Bergen Hill, New Jersey, and common elsewhere in the State.

D. intacta, Hagen.

D. elisa, Hagen.

Recorded from Bergen Hill, New Jersey.

D. ornata, Ramb.

PERITHEMIS, Hagen.

P. domitia, Dru.

Recorded from New Jersey.

NANNOPHYA, Ramb.

N. bella, Uhl.

Recorded from New Jersey.

Family SIALIDÆ.

SIALIS, Latr.

S. infumata, Newn.

S. americana, Ramb.

CHAULIODES, Latr.

C. pectinicornis, Linn.

Caldwell, common—Crane.

O. serricornis, Say.

O. maculatus, Say.

Caldwell, common—Crane.

CORYDALIS, Latr.

O. cornuta, Linn.

Common throughout the State. Caldwell—Crane.

Family HEMEROBIDÆ.

ALEURONIA, Fitch.

A. westwoodii, Fitch.

MICROMUS, Ramb.

M. insipidus, Hagen.

HEMEROBIUS, Linn.

H. amicus, Fitch.

H. alternatus, Fitch.

H. stigmaterus, Fitch.

H. castanea, Fitch.

H. tutatrix, Fitch.

H. conjunctus, Fitch.

H. pinidumus, Fitch.

H. hyalinatus, Fitch.

POLYSTÆCHOTES, Burm.

P. punctatus, Fabr.

P. vittatus, Say.

Recorded from New Jersey.

MANTISPA, Illig.

M. brunnea, Say.

M. interrupta, Say.

CHRYSOPA, Leach.

- C. oculata*, Say.
- C. illepida*, Fitch.
- C. albicornis*, Fitch.
- C. chlorophana*, Fitch.
- C. fulvibuca*, Fitch.
- C. chi*, Fitch.
- C. ypsilon*, Fitch.
- C. latipennis*, Schneid.
Caldwell, common—Crane.
- C. nigricornis*, Burm.
- C. lineaticornis*, Fitch.
- C. 4-punctata*, Burm.
- C. rufilabris*, Burm.
- C. interrupta*, Schneid.
- C. emuncta*, Fitch.
- C. harrisii*, Fitch.
- C. plorabunda*, Fitch.
- C. flava*, Scop.

ACANTHAOLISIS, Ramb.

- A. americana*, Dru.

MYRMELEON, Linn.

- M. gratus*, Say.
- M. obsoletus*, Say.
- M. abdominalis*, Say.
Recorded from New Jersey.
- M. nebulosus*, Oliv.
- M. immaculatus*, De G.
Caldwell, rare—Crane.

ASCALAPHUS, Fabr.

- A. hyalinus*, Latr.
- A. 4-punctatus*, Burm.

Family PANORPIDÆ.**PANORPA, Linn.**

P. rufescens, Ramb.

Caldwell, common—Crane.

P. venosa, Westw.

P. debilis, Westw.

P. nebulosa, Westw.

P. maculosa, Hagen.

BITTACUS, Latr.

B. occidentis, Walk.

Family PHRYGANIDIDÆ.**NEURONIA, Leach.**

N. semifasciata, Say.

Recorded from New Jersey. Caldwell, common—Crane.

N. postica, Walk.

Caldwell, common—Crane.

LIMNOPHILUS, Leach.

L. rhombicus, Linn.

Caldwell, rare—Crane.

L. interruptus, Say.

Described from New Jersey. Caldwell, not common—Crane.

L. pudicus, Hagen.

ENOIOYLA, Ramb.

E. subfasciata, Say.

E. lepida, Hagen.

NOTIDOBIA, Steph.

N. pyraloides, Walk.

SETODES, Ramb.

S. candida, Hagen.

MACRONEMA, Pictet.

M. zebratum, Hagen.

HYDROPSYCHE, Pictet.

H. scalaris, Hagen.

H. morosa, Hagen.

Caldwell, common—Crane.

H. phalerata, Hagen.

PHILOPOTAMUS, Leach.

P. distinctus, Walk.

Caldwell, rare—Crane.

POLYCENTROPUS, Curtis.

P. validus, Walk.

P. lucidus, Hagen.

CHIMARRHA, Leach.

C. aterrima, Hagen.

CONCLUSION.

In the foregoing pages 6,098 species are listed, to which future studies will undoubtedly add at least 20 per cent. more ; they are distributed as follows :

	Families.	Genera.	Species.
Hymenoptera	30	302	1,074
Coleoptera	71	815	2,227
Lepidoptera	28	484	1,140
Diptera	57	319	811
Orthoptera	7	52	117
Hemiptera—			
Heteroptera	26	173	313
Homoptera	10	101	242
Neuroptera	9	61	174
Total	238	2,307	6,098

Authors are not agreed as to the best way of making up catalogues. Some begin with the higher families, running down to the most degraded ; others reverse this proceeding and begin with the least specialized forms, ending with the highest types. Of the lists followed in this catalogue, the *Hymenoptera*, *Orthoptera* and *Neuroptera* run the series from the lowest to the highest. In the *Coleoptera*, *Lepidoptera*, *Diptera* and *Hemiptera* the highest forms are placed at the head.

In adopting the Linnæan orders, rather than the more numerous divisions of Brauer or Packard, I have followed convenience and not conviction, believing that a catalogue of a restricted fauna is not the place to bring forward a classification not generally accepted. In a future edition of the catalogue I should expect to make the change.

ERRATA.

THE FOLLOWING ESCAPED CORRECTION IN PROOF:

- Page 172, for **OCENIA** read **OÆNIA**.
Page 182, for **P. serricorne** read **L. serricorne**.
Page 216, for **C. nsertus** read **C. insertus**.
Page 370, for **S. palipes** read **S. pallipes**.
Page 370, for **OÆNOMYIA** read **OCENOMYIA**.
Page 370, for **STRATYOMYIDÆ** read **STRATIOMYIDÆ**.
Page 372, for **THERIOPLECTES**, Zell., read **THERIOPLECTES**,
Zett.
Page 388, for **T. pictulum**, Pa., read **T. pictulum**, Will.
Page 429, for **LEPTOYPHA** read **LEPTOPHYA**.

PRINCIPAL ABBREVIATIONS OF AUTHORS' NAMES.

A.

Aaron.....Aaron, S. Frank.
 AbbAbbot, John.
 AhrAhrens, August.
 Am. et Serv...Amyot & Serville.
 AshmAshmead, William H.
 AubéAubé, Charles.

B.

Bärenspr.....Bärensprung, Felix.
 BalyBaly, Joseph S.
 BassBassett, H. F.
 BatesBates, Henry William.
 Bdv.....Boisduval, Jean Alphonse.
 Bd-Lec Boisduval & Leconte.
 Beauv. Beauvois, Palisot de.
 Beth.....Bethune, Charles J. S.
 Billb... Billberg, Gustav Johann.
 BkhBorkhausen, Moriz B.
 BlakeBlake, Charles A.
 Blanch.....Blanchard, E.
 Bland.....Bland, James H. B.
 Boh.....Boheman, Carl H.
 Boisdsee Bdv.
 Bon.....Bonnelli, François André.
 BonvBonvouloir, Henry de.
 Borkh. see Bkh.
 BouchéBouché, Peter Friedrich.
 BourgBourgeois, J.
 Brace.....Brace, John P.
 BremBremer, Otto.
 Brem. & Grey,
 Bremer & Grey.
 BrendBrendel, Emil.
 BrownBrown, Peter.
 Brullé.....Brullé, Auguste.
 BrunerBruner, Lawrence.
 Buck.....Buckley, S. B.
 BucktBuckton, George B.

Buq.....Buquet, Lucien.
 Burm..... { Burmeister, Hermann Carl
 C.

C.

Cam.....Cameron, P.
 Cand.....Candèze, E.
 Casey.....Casey, Thomas L.
 ChambChambers, Vactor Toucy.
 Chd..... { Chaudoir, Baron Maxi-
 milien de.
 Chap..Chapman, Thomas.
 CharpCharpentier, Toussaint de.
 Chevr.....Chevrolat, Aug.
 Clairv.....Clairville, J. de.
 ClarkClark, Bracy (Diptera).
 ClarkClark, Hamlet (Coleoptera).
 Clem.....Clemens, Brackenridge.
 Comst.....Comstock, John Henry.
 CostaCosta, Achille.
 Coup.....Couper, William.
 CrCrotch, Geo. R.
 CramCramer, Pieter.
 Cress.....Cresson, Ezra T.
 CurtisCurtis, John.

D.

Dahl.....Dahlbom, Andres Gustav.
 DallDallas, William S.
 DalmDalman, Johann Wilhelm.
 Davis.....Davis, William T.
 De GDe Geer, Carl.
 Dej..... { Dejean, Comte Pierre Fran-
 çois Marie Auguste.
 DesvDesvoidy, Robineau.
 DoublDoubleday, Edward.
 Doubl-Hew . Doubleday & Hewitson.
 Drap.....Drapiez, A.
 Dru.....Drury, Drew.

Duf.Dufour, Leon.
Duft.Duftschmid, Caspar.
Dum. { Duméril, André Marie Con-
stant.
Dunc.Duncan, James.
Dup. { Duponchel Philogène Au-
guste Joseph.
D'Urb.D'Urban, William Stewart M.

E.

Edw. H.Edwards, Henry.
Edw. { Edwards, W. H. (in Rho-
palocera).
Eich.Eichhoff, W.
Er. { Erichson, Wilhelm Ferdi-
nand.
Esch. { Eschscholtz, Johann Fried-
rich.

F.

Fabr.Fabricius, Johann Christ.
Fairm.Fairmaire, Leon.
Fall.Fallen, Carl Friedrich.
Feld.Felder, Cajetan.
Fern.Fernald, Chas. H.
Fieb.Fieber, Franz Xaver.
Fischer. { Fischer, Johannes L. (Dip-
tera).
Fischer. { Fischer, Leopold H. (Orth-
optera).
Fitch.Fitch, Asa.
Först.Förster, Arnold.
Forel.Forel, Albert.
Forst.Förster, Johann Reinhold.
Foudr. { Foudras, Antoine Casimir
Marguerite Eugène.
Fourer. { Fourcroy, Antoine Fran-
çois.
Fröhl.Fröhlich, Jos. Aloys.

G.

G. & H.Gemminger & Harold.
Gdt.Goedart, Johann.
Geoff.Geoffroy, Etienne Louis.
Germ.Germar, Ernst Friedrich.
Gey.see Geyer.
Geyer.Geyer, Carl.
Gn.Guenée, Achille.
Goetze. { Goetze, Johann August
Ephraim.

Gorh.Gorham, John.
Gory.Gory, Hippolyte Louis.
Gray. { Gray, George R. (Orth-
optera).
Gray. { Gray, John Edward (Cole-
optera).
Grav. { Gravenhorst, Johann Lud-
wig Carl.
Grt.see Grote.
Grt. & Rob.Grote & Robinson.
Grote.Grote, Augustus Radcliffe.
Guer.Guerin-Meneville, F. E.
Gyll.Gyllenhal, Leonhard.

H.

Hagen.Hagen, Hermann August
Hahn.Hahn, Carl Wilhelm.
Hald.Haldemann, S. S.
Haliday.Haliday, Alexis H.
Harold.Harold, Edgar von.
Harr.see Harris.
Harris.Harris, Thaddeus W.
Hartig.Hartig, Theodore.
Harv.Harvey, Leon.
Hausm.Hausman, Johann F. L.
Haw.Haworth, Adrian Hardy.
Hbst. { Herbst, Johann Friedrich
Wilhelm.
Heer.Heer, Oswald.
Hein.Heinemann, H. von.
Heinek.Heineken, Carl.
Hellw. { Hellwig, Johann Christian
Ludwig.
Hentz.Hentz, Nicholas Marcell.
Hoffm.Hoffmann, J. J.
Hoffm.Hoffmeister, H. (Diptera).
Holmgr.Holmgren, August Emil.
Hope.Hope, Frederic William.
Horn.Horn, George H.
Howard.Howard, Leland O.
H-S. { Herrich-Schaeffer, Gottlieb,
August, Wilhelm.
Hüb.Hübner, Jacob.
Hulst.Hulst, George D.
Hum.Hummel, Arvid David.
Hy. Edw.Henry Edwards.

I.

Illig. { Illiger, Johann Carl Wil-
helm.

J.

Jaenn.....Jaennicke, F.
 Jek.Jekel, Henry.
 Jur.Jurine, Louis.

K.

Kalt.....Kaltenbach, J. H.
 Kies..... { Kiesenwetter, Ernst August
 Hellmuth von.
 KirbyKirby, William.
 Kirkp.....Kirkpatrick, John.
 Kirsch.....Kirsch, Th.
 Kirsch Kirschbaum, C. L.
 Kirtl.....Kirtland, Jared P.
 Kl { Klug, Johann Christoph
 Friedrich.
 KnochKnoch, August Wilhelm.
 Koch.....Koch, C. L.
 KollKollar, Vincenz.
 Kraatz.....Kraatz, Gustav.
 KugKugelann, Johann Gottlieb.
 KunzeKunze, Gustav.

L.

Lac..... { Lacordaire, Jean Theo-
 dora.
 Laf..... { Marquis de la Ferté-Sen-
 ectere.
 Lap.... Laporte, F. L. de.
 Lap. & Gory..Laporte & Gory.
 Lasp.....Laspeyres, Jacob Heinrich.
 Latr.....Latreille, Pierre Andre.
 L. Duf.....Leon Dufour.
 LeachLeach, William Elford.
 Le B.... Le Baron, William.
 Lec.....Leconte, John L.
 LedLederer, Julius.
 Leidy.Leidy, Joseph.
 LewisLewis, R. H.
 Licht { Lichtenstein, Anton Au-
 gust Heinrich.
 L. or Linn....Linnæus, Carl von.
 Lintn.....Lintner, James Albert.
 Lw.Loew, Hermann.

M.

MacLMacLeay, William S.
 MacqMacquart, Jean.

Mann..... { Mannerheim, Carl Gustav
 von.
 MarsMarseul, S. A. de.
 MarshMarsham, Thomas.
 MarshMarshall, T. A.
 MathMatthews, A.
 Mayr Mayr, Gustav L.
 Megerle { Megerle von Muelfeld,
 Johann Karl.
 Meigen.....Meigen, Johann Wilhelm.
 MellMellié, J.
 Mels { Melsheimer, Friedrich
 Ernst.
 MinotMinot, Charles S.
 Moeschl.....Moeschler, Heinrich Benno.
 Mon.....Monell, J. T.
 MooreMoore, Frederick.
 Morr.....Morrison, H. K.
 Morris { Morris, Margareta H.
 (Diptera).
 Mots.....Motschulsky, Victor von.
 Müll { Müller, Philipp Wilbrand
 Jacob.
 MulsMulsant, Etienne.
 Muls. et Rey..Mulsant et Rey.

N.

Nees..... { Nees von Esenbeck, Chris-
 tian G.
 Newn.....Newman, Edward.
 NitschNitzsch, Christian L.
 NordNordmann, Alexander von.
 Norton.....Norton, Edward.
 NylNylander, William.

O.

OchsOchsenheimer, Ferdinand.
 OestlOestlund, O. W.
 OlivOlivier, Antoine Guillaume.
 O-S.....Osten-Sacken, R. von.

P.

Pack....Packard, Alpheus Spring.
 Pal. Beauv...see Beauv.
 Pall Pallas, Peter Simon.
 Panz { Panzer, Georg Wolfgang
 Franz.
 PascPascoe, Francis P.

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Pass Passerini, Carlo.
 Patton Patton, William H.
 Payk Paykull, Gustaf von.
 Peck Peck, William Dandridge.
 Perty Perty, Maximilian.
 Phillipi Phillipi, F. H. E.
 Pict Pictet, François Jules.
 Poey Poey, Phelipe.
 Prov... Provancher, L'Abbe.
 Putn... Putnam, J. D.
 Putz..... Putzeys, H.

R.

Rag Ragonot, Emile L.
 Ramb. Rambur, J. Pierre.
 Rand.. Randall, John W.
 Rathv..... Rathvon, J. H.
 Ratz { Ratzeburg, Julius Theodor
 Christian.
 R. Desv.. Robineau Desvoidy.
 Reak... Reakirt, Tryon.
 Redt... Redtenbacher, Ludwig.
 Reichenb..... Reichenbach, Anton B.
 Reitt... Reitter, E.
 Reut... Reuter, O. M.
 Riley Riley, Charles Valentine.
 Rob Robinson, Coleman T.
 Rog..... Rogers, W. Frederick.
 Rond..... Rondani, Camille.
 Rossi.. Rossi, Peter.
 Rott Rottenburg, S. A. von.
 Ruthe. Ruthe, Johann Friedrich.

S.

S. & A see Sm. & Abb.
 Sandb Sandberg, Karl von.
 Saund Saunders, William.
 Sauss Saussure, Henri de.
 Say Say, Thomas.
 Schäff Schäffer, Jacob Christian.
 Schaum..... Schaum, Hermann Rudolph
 Schiff..... Schiffermüller, Ignaz.
 Schiner Schiner, J. R.
 Schm { Schmidt, Wilhelm Ludwig
 Ewald.
 Schm-Goeb { Schmidt-Goebel, Hermann
 Max.
 Schneid..... { Schneider, Wilhelm Gott-
 lieb.

Schr..... Schrank, Franz von Paula.
 Schum..... Schummel, Theodore Emil.
 Scop Scopoli, Johann Anton.
 Scriba Scriba W.
 Scud. Scudder, Samuel H.
 Seidl Seidlitz, George.
 Selys..... { Selys-Longchamps, Michel
 E.
 Serv..... { Audinet-Serville, Jean
 Guillaume.
 Shimer Shimer, Henry.
 Shuck Shuckard, W. E.
 Sign Signoret, Victor.
 Sm. & Abb... Smith & Abbot.
 Smith..... { Smith, Frederick (Hymen-
 optera).
 Smith. Smith, John B. (Col. et Lep.)
 Sol..... { Solier, Antoine Joseph
 Jean.
 Speyer Speyer, Adolph.
 Spin Spinola, Maximilian.
 Staeger Staeger, C.
 St. Farg..... { St. Fargeau, Amédée Louis
 Michel Le Peletier
 Comte de.
 St. F. & Serv.. Saint-Fargeau et Serville.
 Stal Stal, Carl.
 Stenh..... Stenhammar, Chr.
 Steph..... Stephens, James Francis.
 Stretch Stretch, Richard H.
 Strk Strecker, Hermann.
 Suffr Suffrian, E.
 S. V..... { Schiffermüller, Verzeich-
 niss.
 Swains..... Swainson, William.
 Swed..... Swederus, Nils Samuel.

T.

Targ-Toz..... Targioni-Tozetti.
 Tasch Taschenberg, E. L.
 Taylor Taylor, George W.
 Thoms Thomson, C. G.
 Thos..... Thomas, Cyrus.
 Thunb ... Thunberg, Carl Peter.
 Tourn Tournier, H.
 Tr Treitschke, Friedrich.

U.

Uhler..... Uhler, Philip R.
 Urban d'Urban, W. S. M.

W.

Wahlb.....Wahlberg, P. F.
 WallgrWallengren, H. D. J.
 Walzl.....Walzl, Joseph.
 WalshWalsh, Benjamin Dann.
 Waterh.....Waterhouse, George Robert.
 WebWeber, Friedrich.
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STATE OF NEW JERSEY

INSECTS OF NEW JERSEY

A SUPPLEMENTAL INDEX

Giving Popular Names and the Chief Crops Preyed
Upon by Destructive Species.

—BY—

JOHN B. SMITH, SC. D.,
STATE ENTOMOLOGIST

Printed for the New Jersey State Board of
Agriculture

To be used with the Supplement to the 27th Annual Report (1899) entitled
"Insects of New Jersey."

CAMDEN, N. J.
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INDEX

To Common Names of Insects and Plants

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By JOHN B. SMITH, Sc. D.

Printed as a supplement to the 27th Annual Report of the State Board of Agriculture.

Since the publication of the list of the species of Insects occurring in the State of New Jersey, there has been a demand, chiefly from teachers, for an index to the common or popular names; and it has been suggested that the usefulness of the book could be greatly enhanced by an index to the main crops, with reference under each to the most common or injurious pests affecting them.

The latter suggestion was under consideration when the general index was prepared; but it was feared that to carry it out would too greatly enhance the bulk of the work, which already at that time, considerably exceeded what had been estimated.

It was not then realized that the book might be useful for school work, and the importance of enabling species to be traced by the common name was not considered.

The index now offered is in no way a duplication of that printed in the book. It refers to insects under their common names only and under the crop headings only the leading pests are noted. It is believed that by the addition of this pamphlet there should be no difficulty in finding any desired species in the book that is in any way commented on.

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INSECTS INJURIOUS TO SHADE TREES AND ORNA-
MENTAL PLANTS

NEW JERSEY

AGRICULTURAL

Experiment Stations

181

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NEW JERSEY AGRICULTURAL EXPERIMENT STATIONS BULLETIN 181

MARCH 2, 1905.

Insects Injurious to Shade Trees and Ornamental Plants.

BY
JOHN B. SMITH, ENTOMOLOGIST.

Bulletin No. 103, dealing with "some insects injurious to shade trees," was published in October, 1894. The demand for it was so great that the edition was soon exhausted, and since that time there has been increasing demand for another publication covering the same ground.

During the last decade general interest in trees and ornamental plants has increased greatly. There are more village and town improvement societies and more landscape gardeners, nurserymen and florists. Several of our cities and towns have park commissioners, shade tree commissions or some official whose duty it is to look after the trees in the streets, parks or other open places in the municipalities. More attention is now paid by individuals to their surroundings and, particularly where dwellings are set in open grounds, large or small, intelligent effort is made to produce pleasing results. Shrubberies and hedges have been and are being set out in greater number and variety than ever before, and, as a rule, the plantations are kept in good condition.

City trees labor under disadvantages which are not always realized by those who have them in charge. It is quite usual for the root system to be largely cut off from connection with the surface; pavements may come within a foot or two of the trunk, leaving only a small breathing space, and, as for the rest, the tree is expected to get what nourishment and moisture it needs from the soil beneath the covering of stone or concrete. It is not generally understood that

a tree makes continuous demands upon the soil and that each year some of the plant-food originally in it is exhausted. As a tree increases in size, it therefore finds increasing difficulty in securing an amount sufficient to keep it in health and vigor.

It happens frequently, also, that when digging trenches for water, gas or other pipe lines, roots are cut and much of a tree's feeding surface is absolutely destroyed. Furthermore, leaky gas pipes poison the soil; sometimes only a little, sometimes to an extent sufficient to kill all neighboring roots or even entire trees.

In other cases, trees on even well-kept grounds are starved; but in a different way. Instead of stone or cement there is a soil covering of sod, kept in the best possible condition, frequently cut and rolled, while the leaves that fall in the autumn are carefully removed and burned. Where fertilizer is put upon the ground at all, there is usually only enough for the sod, and the feeding grass roots are present in such abundance that very little gets below them to the tree roots. Moisture is absorbed in the same way, and frequently a tree suffers from drought even if rain has fallen sufficient to keep the grass in good condition. It is true that the feeding roots of trees extend down deeply and that they obtain food and moisture far below points accessible to grass roots, but in the course of years, if nothing is added, the tree exhausts all available food and begins to suffer. This is particularly true of those forest trees that have been left when the original woodland was cut, and many an oak, hickory and chestnut is dying from starvation whose owner would pay heavily to save it, did he only know how.

From the entomological standpoint these matters are important, because many insects do not attack trees until they show signs of weakness, and that is especially true of borers. When a tree becomes thoroughly infested by borers, there is little hope of saving it; the thing is to prevent attack by keeping the trees in healthy, growing condition. This applies generally, and one of the best methods of preventing insect injury is to keep trees and shrubs in as thrifty a condition as possible. See that there is abundant plant-food and water available, and treat the trees as you would other living beings. Plants have life—different in kind, perhaps, from that of animals—but nevertheless a life that needs nourishment and favorable conditions. Plants suffer from insect attack in almost all their parts, but we have, generally, to deal only with those that injure either the

foliage or the growing shoots, and these may be forms that devour the foliage directly or suck the juices from the tissues. There is no one insecticide that kills all kinds of insects under all conditions, and it therefore becomes necessary to consider the leading injurious species in a somewhat systematic way, indicating under each heading just what materials should be used.

PLANT LICE.

Plant lice are small, usually green or brownish insects found on the under sides of leaves or on growing shoots, that multiply rapidly and nourish by sucking the plant juices. The mouth-parts consist of a jointed beak covering three or four very slender lancets, by means of which the tissue is punctured. An individual plant louse is rarely more, and generally less, than one-eighth of an inch in length, slender and capable of taking only a small amount of sap from the plant. When the lice are few their injuries are unnoticed, but frequently they are so abundant that the drain becomes serious. Every leaf may be burdened by dozens, or even hundreds, and the insects are not satisfied with taking just enough to maintain life; they pump continuously, and, when full to repletion, eject the excess through either the anal opening or through two little honey tubes near the end of the body. Where plant lice are numerous this honey dew, as the excreted juice is called, is sometimes so abundant as to coat the pavements with a sticky mass. The leaves themselves become covered and it forms an excellent surface for a black soot-fungus, that tends to choke the leaves, and so kill them. We have, therefore, not only the direct drain upon the foliage, but also a secondary effect due to clogging. Norway maples, among the shade trees, are the greatest sufferers; the tulip and elms also are more or less troubled, while

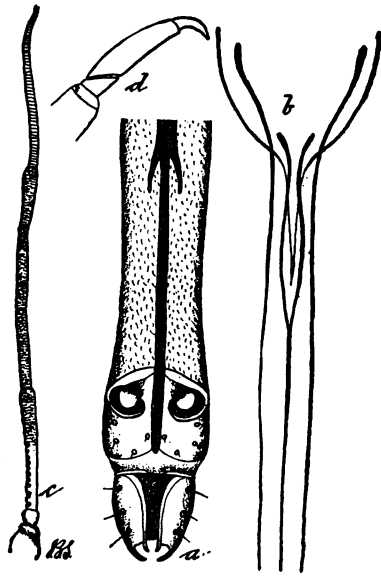


Fig. 1.

Mouth structures of a plant louse: a, the beak; b, the piercing lancets; c, antenna or feeler; d, the foot.

near the end of the body. Where plant lice are numerous this honey dew, as the excreted juice is called, is sometimes so abundant as to coat the pavements with a sticky mass. The leaves themselves become covered and it forms an excellent surface for a black soot-fungus, that tends to choke the leaves, and so kill them. We have, therefore, not only the direct drain upon the foliage, but also a secondary effect due to clogging. Norway maples, among the shade trees, are the greatest sufferers; the tulip and elms also are more or less troubled, while

linden and the others that are usually planted are practically exempt. There are plant lice on all, but on only those mentioned is there any habitual increase to an extent that makes them a nuisance. In the garden, on most shrubbery and on ornamental plants generally, plant lice often become annoying, and even destructive. *Crataegus* is especially liable to attack, and the tips will curl, twist, turn black and become very unsightly, if nothing is done to check the insects. The apple, among the tree fruits usually planted in gardens, is the only one that suffers to any considerable extent. Of the small fruits currants are most likely to be troubled, and among the flowering plants roses suffer most. There is hardly a plant or shrub that may not at some time become badly infested by plant lice, and the methods of dealing with them should be known to all.

Remedies for Plant Lice.

Plant lice eat no part of the plant itself, and it is absolutely impossible, for that reason, to reach them with any of the stomach poisons. Paris green, arsenate of lead and all other materials that

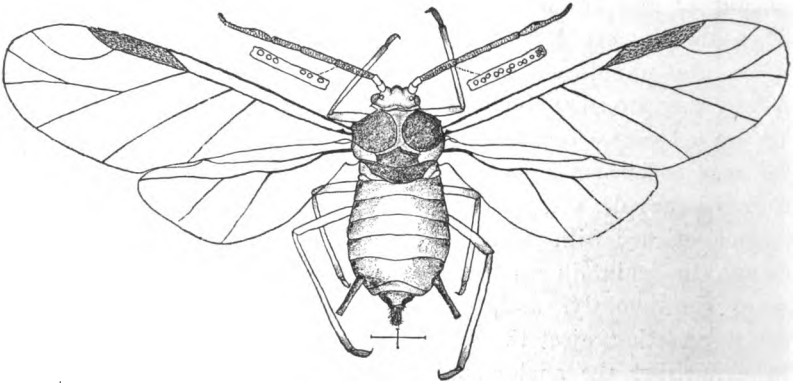


Fig. 3.

Apple plant louse, winged form, showing the honey tubes near end of body.

kill by being eaten are of absolutely no use against these little sucking pests. They can be reached only by contact poisons, which act through the spiracles or breathing pores at the sides of the body.

There are two kinds of contact poisons: those that act mechanically by clogging the pores and those that penetrate into the body and poison directly. Soaps are clogging in character, and so are oils in

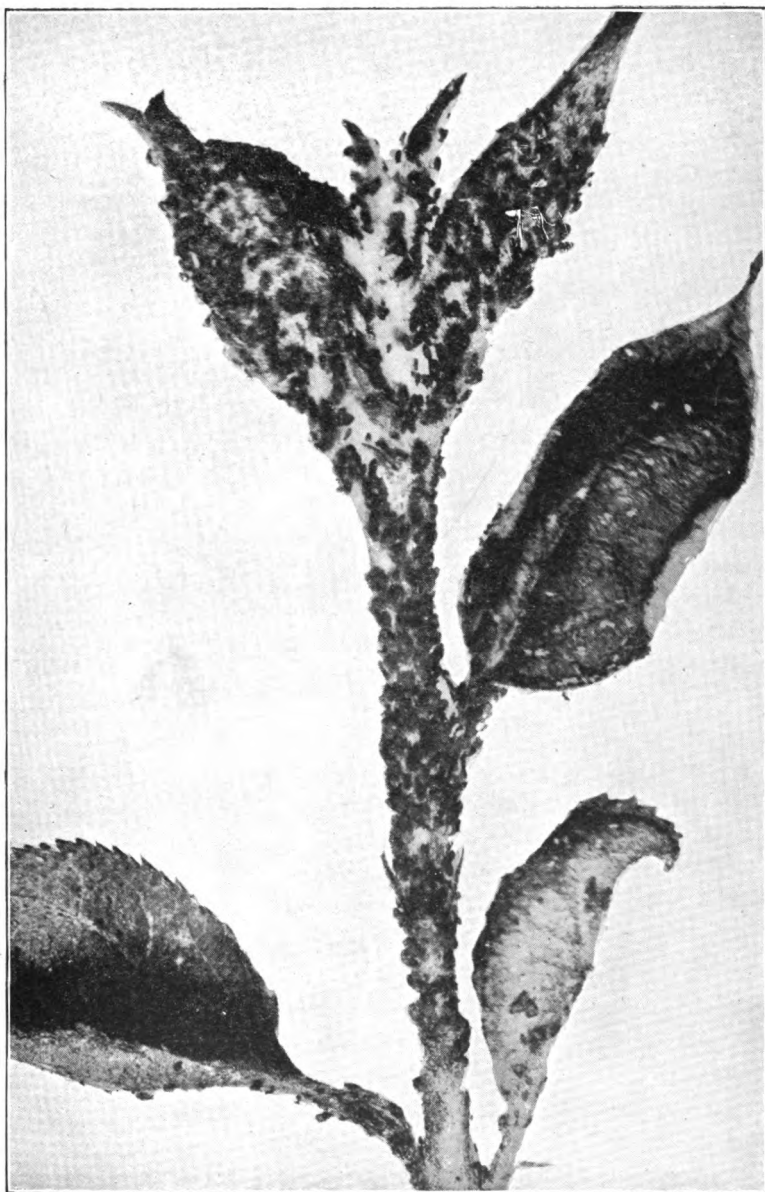


Fig. 2.

An apple twig infested by plant lice: shows how the insects congregate in great numbers.

general; but the petroleum oils are internal insecticides as well. Tobacco decoctions and all dry powders act only when they enter the spiracles and get into the body of the insect. Dry powders are effective in proportion to their fineness; coarsely ground tobacco, for instance, will be absolutely useless, where a sample that is finely ground may be effective. In the one case the particles cannot penetrate through the spiracles and hence do not affect the insects at all; in the other they get where they can exercise their specific effect and the insects suffer accordingly. In any case thoroughness in application is absolutely demanded.

Experience has shown that sprays are better than dry powders, as against plant lice, and that the finer and more forcible the spray the better its effect. The cleanest, and on the whole a very satisfactory application on flowering plants, is a tobacco decoction. There are now upon the market several tobacco extracts, which may be diluted with water and applied without further preparation. All these extracts, so far as I have used them, are more or less satisfactory; but in every case it is necessary to use them about twice as strong as is recommended on the label. Furthermore, it will be found that not all kinds of aphides respond equally well. Green lice, in general, succumb more readily than brown or black lice, and some of the very smooth black forms resist so strongly that it is almost impossible to kill them with tobacco alone. Instead of the extract, a tobacco soap may be used, and that is more effective, because it combines a clogging with the direct poisoning action.

Among the soaps the whale or fish oil preparations are much the most effective. They usually come in paste form, although some are dried out so as to cut into cakes; but in either case about one pound of the soap in from four to six gallons of water will be satisfactory. The tobacco preparations are usually harmless to plants at all strengths. The soap mixtures are caustic and tend to burn or otherwise injure foliage, so they must be more carefully used. One pound to four gallons of water is usually harmless to all but the tenderest of plants; but where there is any doubt, one pound to six gallons should be first tried, and if this is not effective within a day or two, another application should be made, increasing the strength until the insects are killed or the plant shows signs of becoming injured.

In the garden plant lice are rather easily kept in check by the use of tobacco or soap mixtures; but in all cases the applications should

be made before they become abundant enough to do injury. Unless the insects are actually touched by the mixtures, they will not be harmed; it is therefore important that they should not be allowed to become numerous enough to curl the leaves, to form a protection for the specimens beneath them. Two or three applications of moderate strength at short intervals are better than a single application of a strength that is dangerous to foliage.

If whale oil soap is not available, laundry soaps may be used and particularly those that contain a percentage of naphtha or kerosene. There are several soaps of that kind on the market, and they are almost as effective as the fish oil combinations. Greater care must be taken with ordinary laundry soaps than with either of the others.

Potted plants, if they are treated with soaps, should have the surface of the ground protected that the suds may not get into it. If the soap is emulsified with soda, as it usually is, this will poison the roots of the plants if it gets to them. Outdoors no reasonable application is likely to influence the soil.

Shade trees, when of any considerable size, cannot often be satisfactorily treated for plant lice, because it is almost impossible to reach all the insects; but if they are of moderate size and the infestation is bad, fish oil soap offers the best chance for good results.

Natural Enemies.

Plant lice have many natural enemies and their increase depends largely upon weather conditions, but there is no one condition which is uniformly favorable or unfavorable to all. Some thrive during hot, dry weather; others do better in a season that is cold and moist. The latter conditions favor the development of that species which is so abundant upon the Norway maples early in the season, and usually after a cold, wet spring a change that results in a few days of hot, dry weather will mark the end of the attack upon that foliage.

It will be always noted that whenever plant lice increase abnormally their predatory and parasitic enemies also increase, and that somewhere about the middle of the season the tendency is to re-establish a balance, the plant lice decreasing to normal numbers. This does not apply in all cases, but may be considered a rule, yet there can be no dependence upon these insect enemies; whenever an injurious species increases to such an extent as to threaten harm, destroy it, if at all possible.

LEAF HOPPERS.

Leaf hoppers are small, oblong insects, tapering backwardly, usually green or yellowish in color; sometimes prettily marked, with a slender body and blunt, rounded head. They rarely exceed one-eighth of an inch in length, are usually found on the under sides of leaves, and, when adult, hop and fly readily. Shade trees are not usually much attacked by them, but garden plants are frequently infested. Roses and currants are especially liable to attack, and when the hoppers are at all abundant the leaves become first yellow-dotted and afterward

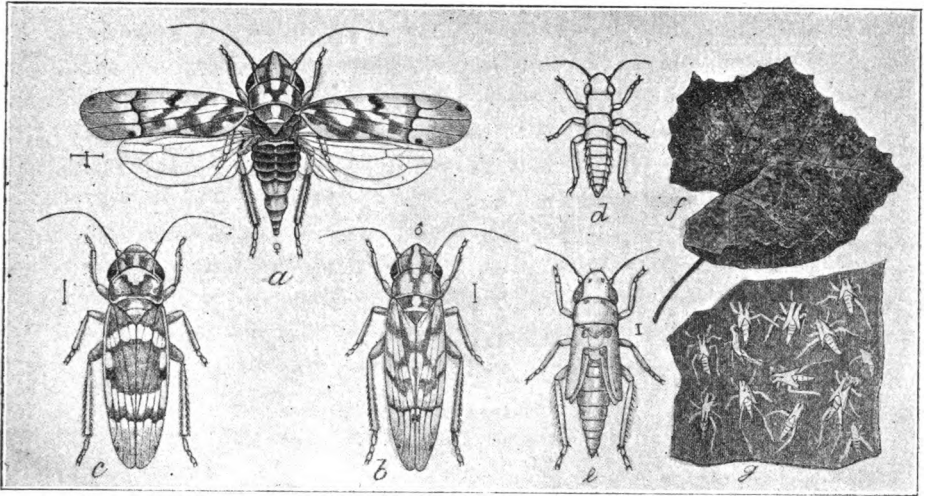


Fig. 4.

The grape-leaf hopper: *a*, adult with expanded wings; *b*, *c*, same with wings folded as at rest, variations; *d*, larva or nymph; *e*, pupa; *f*, an injured leaf; the cast skins on the under side of the leaves. From Marlatt, U. S. Dept. Agl.

brown and dry. Grape-vines are also very liable to infestation by these insects, which cause the early browning and drying up of the leaves long before the fruit is ripe. Quite a number of other garden plants are infested, and of the fruit trees, the apple is again the one most liable to attack. In general, all leaf hoppers have much the same habits. They appear early in the season as small, greenish, wingless creatures, running about on the under sides of the leaves and jumping only when seriously disturbed. About midsummer they become winged, and then, at the least touch or disturbance, they jump and fly. They continue throughout the summer and most of them winter in the adult stage.

Remedial Measures.

To control these insects, persistent work is required. Where they have reached the flying stage it is necessary to fill the air around the treated plant with the spray mist, so that the insects, even if they leave the plants and fly, will encounter the insecticide and be killed by it. As they feed like plant lice, they are equally immune against arsenical preparations, and must be reached by contact poisons. Tobacco is not nearly so satisfactory as the soap mixtures, and of the soaps those carrying kerosene or naphtha are best. Instead of soap mixtures, the kerosene emulsion or one of the soluble preparations of kerosene or crude oil may be employed, and all these are effective in proportion to the thoroughness with which the application is made. Here, also, the element of time is of importance. If the applications are made before the insects are winged, they will be easily hit upon the plant and most of those touched will be killed. If the application is made afterward, many will get away; or, even if they are hit by the spray when upon the plant, it does not reach the spiracles, which are protected by the wing covers. It is really better, therefore, to disturb the insects so as to cause them to fly, the spray being directed in such a way as to hit them in the air. As to the strength of the mixtures, that may be as recommended for plant lice.

SCALE INSECTS.

Scale insects are among the worst pests of the garden, and some are seriously troublesome on shade trees as well. Among the latter, the soft maples are especial sufferers from the cottony maple scale; the hard maples suffer to a less extent from a *Pseudococcus*, and the tulip tree is attacked by a soft scale. Nut trees are often infested by the oyster-shell bark louse, which is also quite common on poplar and willow, while only occasionally troublesome on elm and maple. In the garden, scale insects are even more plentiful, almost all shrubs and most of the ornamental plants suffering to some extent. The San José or pernicious scale attacks almost everything except privet and cherry; the oyster-shell bark louse sometimes ruins lilacs, is common on *Crataegus*, *Euonymus* and many other shrubs, as well as on apple. The scurfy scale is usually less abundant, but is sometimes common enough on apple and pear. The rose scale attacks blackberry and raspberry, and on roses sometimes causes considerable trouble.

Scale insects are those which secrete and cover themselves with a waxy or horny shield or scale that protects or hides them from view. Soft scales are so called because the surface covering is yielding in texture and forms part of the real insect: there is no separation between scale and insect, and any injury to the scale is an injury to the insect itself. Armored scales have the shield-like covering separated from the creature that produces it; the latter lies free beneath its shelter and it is quite possible to lift the scale from its attachment

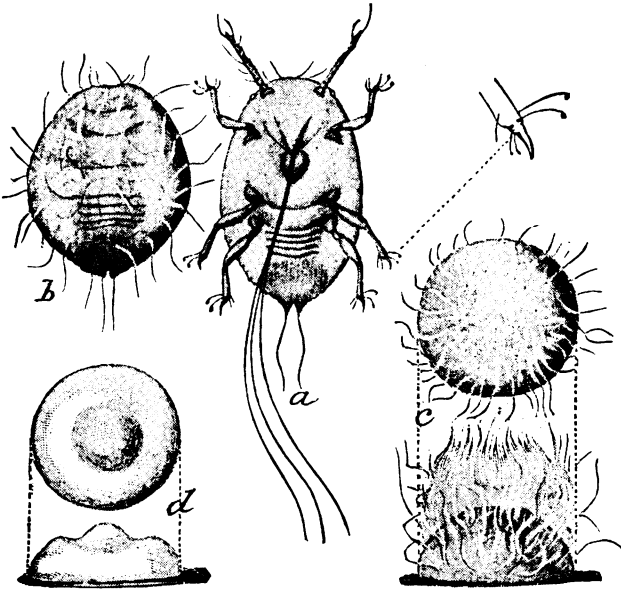


Fig. 5.

The formation of a scale: *a*, the larva with its mouth filaments extended; *b*, the larva has set, begun to feed, is becoming more rounded and waxy filaments are exuding from the surface; *c*, the insect has become circular and the waxy filaments cover it completely; *d*, the filaments have run together and form the first scale. From Howard, U. S. Dept. Agl.

without disturbing the insect. It results from this that armored scale insects are difficult to reach with insecticides, because they are protected from all but the most corrosive and penetrating materials. Scales differ in thickness and some are much more easily pierced than others. There is also a great difference in their life history, and no one method will answer for the destruction of all. They agree in having a minute, six-footed active larva, which crawls about for a few hours—sometimes a day or two—and then inserts the long, slender lancets that serve it for mouth-parts into the plant tissue. Within

a few hours after it begins feeding waxy filaments are produced over the surface of the body, and these, when sufficiently dense, coalesce and form the first covering or scale. Beyond that point the histories differ and each species must be taken up by itself.

THE COTTONY MAPLE SCALE.

Pulvinaria innumerabilis, Rathv.

Besides occurring on maple, this insect is also found on Osage orange, grape and Virginia creeper; on the latter, most often, after the maple. In some years and in some cities the soft maples are so

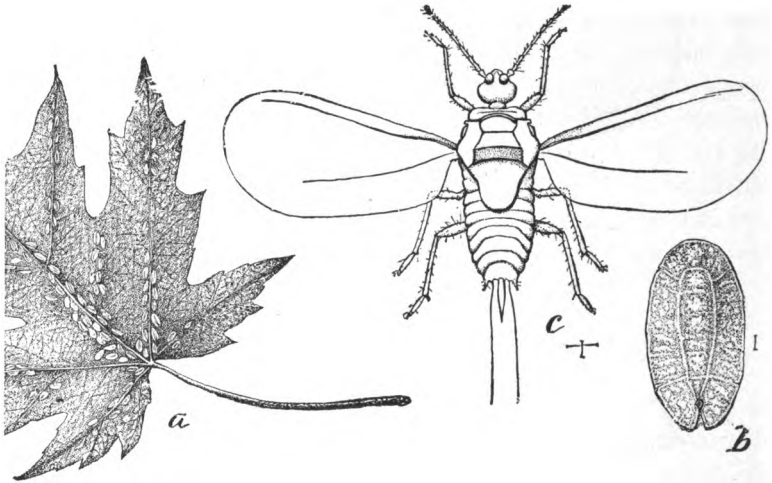


Fig. 6.

The cottony maple scale: *a*, young set along the ribs of a leaf; *b*, one of the recent sets, enlarged *c*, male, much enlarged. From Div. Ent., U. S. Dept. Agl.

seriously infested that they become wilted and sickly, while the stone flagging on the street beneath is coated by a black, sticky substance. This is the honey dew excreted by the insects, and on which a black fungus flourishes luxuriantly. The injury is therefore similar to that caused by plant lice, and both drains the trees directly and injures them indirectly by choking the foliage.

The species usually attract attention late in May or early in June, when the gravid female excretes from beneath the scale a mass of white, waxy or cottony material, among which the eggs are laid.

She is then more than a quarter of an inch in length and appears as a white fluffy mass, with an oval brown head, which is really the scale itself, although forming less than half the length of the apparent creature. This female feeds ravenously, pumping sap in such quantity that there is a constant dripping to the leaves and ground below. An enormous number of eggs is produced—between 1,000 and 2,000—and these are all lodged in the cottony mass. They are brown in color, exceedingly minute, and, when all are laid, actually force the mother scale from the surface of the twig until it is



Fig. 7.

The cottony maple scales: *a*, females of *acericola* on a leaf; *b*, females of *tinnuerabilis* on a twig
From Div. Ent., U. S. Dept. Agl.

attached only by its mouth filaments and by the adhesive character of the white mass. The eggs begin to hatch about the middle of June and continue until well along in July, producing a larva of the usual form and brown in color. The great bulk of the hatching comes about the beginning of July, and at that time infested twigs literally swarm with thousands upon thousands of moving atoms. In a day or two they fix themselves along the veins of a leaf or on young twigs and begin to feed. The formation of the scale begins immediately, and about three weeks thereafter we have the first molt or change of skin. The waxy secretion or scale then increases in thickness and

the difference between the sexes becomes apparent. Meanwhile, after all the eggs have been deposited, the adult female dies, and at almost any time afterward a heavy storm may wash off the white masses. On the other hand, when trees have been badly infested, remnants of the tufts remain in sheltered positions for months and make it seem as if the tree was still infested. As a matter of fact, the work of the hibernating forms is done by the middle of June; after that, whatever injury occurs, is caused by the setting young.

When the first molt has been reached the males, remaining slender, soon attain full size and cover themselves with a thick coating of whitish waxy material. The pupa forms within the larval skin, the parts of the future adult become gradually distinct, and a pair of long, waxy filaments is produced from near the end of the body; the protrusion of these filaments indicating the approaching appearance of the male. The posterior end of the scale is in this manner raised up and the perfect insect backs out, with wings held close to the side of its body. During this period the females have grown larger and broader across the posterior region; but the scales have remained flat, or with only a slight median ridge. Just before the males appear, there is another molt and the color changes to a somewhat deeper yellow with deep red markings. The males mature during August and early September, seek the females and then die. The females gradually lose their bright red markings, change to a deep brown color, become more convex, secrete a thicker coating of wax and the scales become more distinctly ridged. They do not lose the power of motion as do the armored scales, and, before the leaves fall, migrate to the twigs and fix themselves—generally on the upper side. They feed as long as the sap flows, then become torpid and remain in that condition until the following spring, when feeding begins again and with it the development of the eggs.

Remedial Measures.

When this insects attacks shrubs, vines or the lower parts of trees that are easily accessible, the infested twigs and branches may be trimmed off and destroyed as soon as the cottony masses are noticed. As they usually set close to the tips, this is often possible without mutilating either tree or shrub. Even shade trees of considerable size can be so dealt with when the infestation is not unusually bad.

The cuttings should be burnt or taken to some distance from any plants likely to become infested by crawling young, should any hatch. If this cutting is for any reason undesirable, the question of applying insecticides arises.

In ordinary seasons the insects are not sufficiently abundant to be a real menace to a tree and may be left without treatment. There is sometimes a period during which they become increasingly abundant; but with this increase comes also a corresponding development of the natural enemies. So, as a rule, a season, during which the insect is unusually plentiful, is followed by one in which it is practically harmless.

Where it is desired to keep trees or shrubs entirely clean, a diluted petroleum, either crude or distilled, to which some soap has been added, will be most useful. This matter of insecticides is more fully referred to later, and in this connection it is only necessary to say that, whatever is used, it should be applied as soon as possible after the fluffy masses become fully apparent on the trees. The oily or soapy materials penetrate into the masses, clog or mat the cottony fibres and make it impossible for the developing young to get through.

If, for any reason, it is impossible to make an application at that time, it will be better to wait until the young are noticed. That can be easily determined by cutting an infested twig and placing it in a box with white paper. As soon as the paper begins to be covered with brown moving atoms, the time is at hand for an effective application, and then a thorough spraying of the infested trees with fish oil soap, one pound in five gallons of water, will result in the destruction of the young. At that period the insects are entirely unprotected, and even under normal conditions not more than 2 or 3 per cent. of the larvæ ever succeed in fixing themselves to the surface of the plant tissue. A thorough drenching with a proper insecticide will reduce this percentage to so small a one that the trees may be considered clean for the season following.

As the tendency of this scale is always toward the outside, it will not be necessary to get into the interior of the tree, nor to spray beyond the region actually infested by the white scales. It is quite usual for trees to have the upper branches clean, even though the lower ones are badly infested. In such cases the lower branches only need be treated, care being taken to reach the full extent of the infestation and a little beyond it.

THE TULIP SOFT SCALE.

Lecanium tulipiferæ, Cook.

The tulip, *Liriodendron tulipiferæ*, is deservedly a popular shade tree in many localities, and is, as a whole, fairly free from insect injury. Plant lice attack it in some localities and this soft scale has increased to such an extent as to seriously threaten the smaller trees. The scale, as it appears in midsummer and later, is almost hemispherical, nearly a quarter of an inch in diameter, gray in color, slimy to the touch and repulsive to the eye. It crushes easily when handled and the body contents have a deep purplish color, with an odor that is distinctly offensive. It is the largest of its tribe in New Jersey and so disagreeable that many persons have preferred to cut down their trees rather than attempt to deal with the insect.

The female scales grow until late August, and in early September are mature and ready to reproduce; young then appear beneath the body in great numbers. They are minute, black, somewhat flattened above, oval in shape and have the body segments clearly marked. Thousands of these larvæ swarm in early September on and near the infested branches, setting so close together that they conceal the bark completely and give it their own dull, black tint.

They begin feeding at once and make some growth before cold weather sets in, being at that time almost one-sixteenth of an inch in length, jet black and quite visible to the naked eye. The adults dry up and many of them drop or are washed off during the winter, so that most are gone when spring again comes around. At that time the larvæ resume growth, and become large enough to attract attention in June. Late in July the insects are sexually mature and the life cycle is complete.

This species is kept in check by a small caterpillar that feeds upon the young. In September, when the female scales are reproducing, we often find, under the scale, a little reddish caterpillar which lives in a web and feeds greedily on the larvæ. Sometimes every scale on a twig shelters one of these caterpillars, which make galleries from one point to another, occasionally forming masses of silk that hold together all the scales on one twig. Unfortunately, these caterpillars cannot eat the larvæ as fast as they are produced, and a considerable number always escape to set upon the growing twigs.

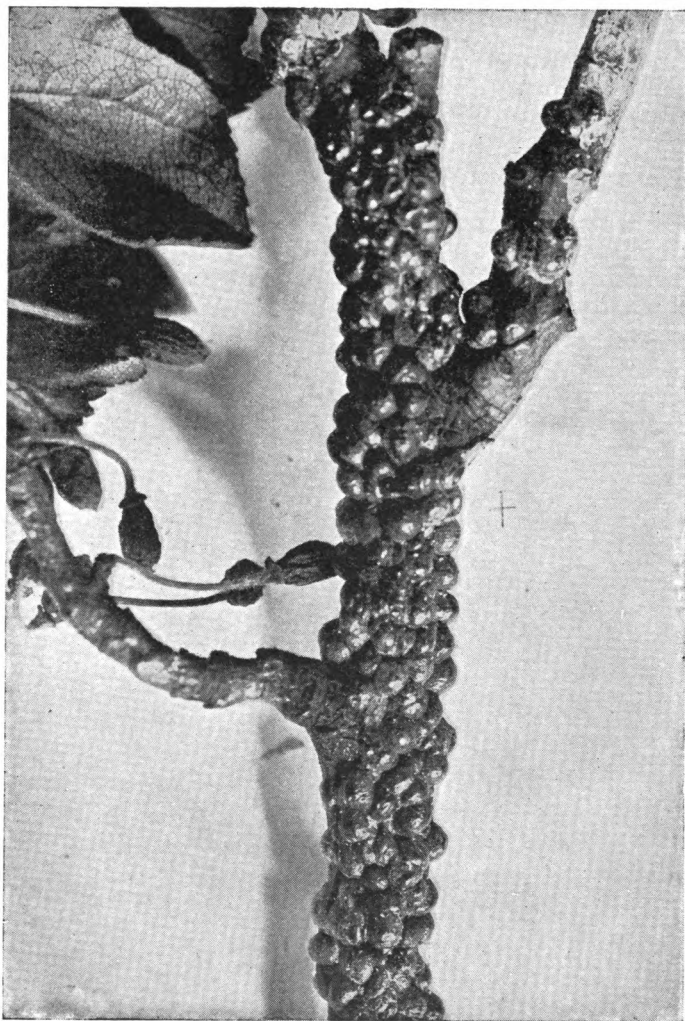


Fig. 8.
A soft scale as it appears on badly-infested twigs.

Remedial Measures.

This is another of the species that may be reached most satisfactorily in winter. Undiluted crude oil may then be used under the restrictions hereinafter mentioned, and will kill all the insects that it touches. As the scale grows only a little during the fall, it is easily penetrated by the oil and good results are generally obtained from the application. As this tree sometimes grows to a great size, and as the scales may occur on all parts of it, the application of insecticides is a considerable task; nevertheless, with a proper outfit, it can be accomplished. Theoretically, the best time to make applications is in September, when the young are just setting; they are then less resistant, and even fish oil soap—one pound in four gallons of water—will answer. On the other hand, the foliage then interferes and makes it more difficult to reach the points at which the young are setting.

THE OYSTER-SHELL BARK LOUSE.

Mytilaspis pomorum, Bouché.

This insect derives its common name from its shape, which is like that of a long, narrow oyster, and so characteristic as to be easily recognizable. The cast skins are at the narrow end of the scale and form what is apparently its head. The females come to maturity late in August, and egg-laying continues until well along in September, when the space below the scale will be found entirely filled with from forty to one hundred and ten minute, whitish eggs, the usual number being somewhat less than one hundred. These eggs remain through the winter protected by the scales, and the larvæ hatch during the early part of the following June. Growth is slow; there is only one brood, and when not excessively abundant the insect does not do much injury. It does, however, become excessively abundant at times, especially on lilac, apple and pear, which may become so covered that the shoots begin to die.

Walnut and butternut trees are very susceptible to attack and are sometimes killed, even when of considerable size. So willow and poplar are often infested to an extent sufficient to cause injury. Among fruit trees, apples are most susceptible; but it is rare for them to be so infested as to suffer harm.

Remedial Measures.

Where lilacs are badly covered it will be best to cut out all the scaly wood that can be spared. Lilac will stand severe trimming and does not require a long time to make new growth. If an infested hedge is carefully looked after and the bad shoots are kept trimmed out, this insect can be controlled without the application of any insecticides. Judicious trimming will also help willow and other infested trees and plants.

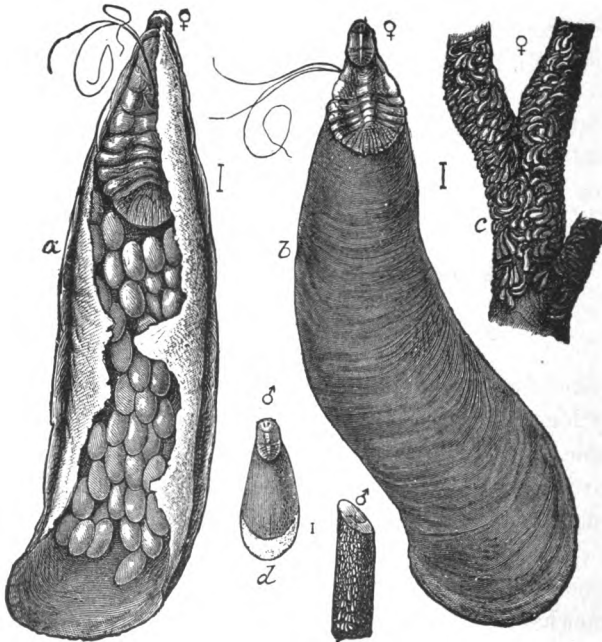


Fig. 9.

The oyster-shell bark louse, *Mytilaspis pomorum*, Bouche: a, female with the egg mass beneath the scale; b, same from above, showing the normal appearance of the species; c, a twig infested by females; d, the male scale, natural size and enlarged.

From the Div. Ent., U. S. Dept. Agl.

If cutting out is not feasible, insecticides must be resorted to, and there is only one time when they can be applied with any prospect of success. It has been shown that the insects winter in the egg stage, covered by the female scales, and no application made during that season stands any chance of producing a satisfactory effect. Unless the scales can be actually washed off or corroded, nothing that covers them will affect the eggs underneath. It is in June, when the

eggs hatch, that applications may be made to prevent the setting of the young. These applications may consist of fish oil soap mixtures, one pound to four gallons of water or of oil emulsions. It is impossible to say definitely just when spraying should be done; that will vary with the season and the year. It will be necessary to watch during the early part of June, to note the first appearance of moving larvæ, and as all the eggs hatch at about one time, a single application will generally be all that is needed. There is a period of about a week from the time of hatching, during which the scale covering is not dense enough to offer much resistance, when proper insecticides are most likely to be effective.

In a general way, this insect seems to be more troublesome in the northern parts of the State than in the south, although even in the south willows and poplars are sometimes very badly infested.

THE SCURFY SCALE.

Chionaspis furfurus, Fitch.

This scurfy scale, or "Harris Louse," is much broader than the preceding, very light gray in color and much thinner in texture. The cast larval skins are at the narrow end of the scale, and in general the life history is much like that of the preceding species. These larvæ also hatch during the early days of June, but are orange in color. The male scales are comparatively very small, narrow and almost white. The eggs are developed in September and are deep purplish-brown, varying from twenty to eighty in number, sixty being, perhaps, an average. Of the shade trees, poplar is most frequently infested, and in the garden currants among the small fruits suffer most. Among the fruits pear is most usually infested, apple coming next, and among the shrubs *Crataegus* is the usual host. There is only one brood in this State, and the winter is passed in the egg stage.

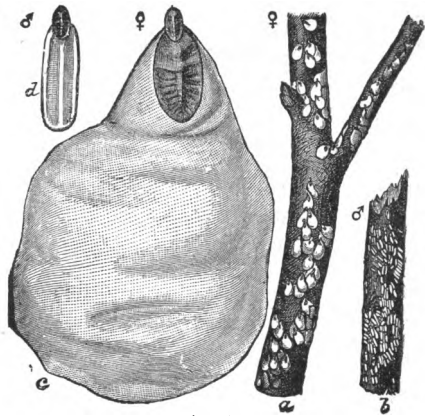


Fig. 10.

The scurfy scale: a, twig showing female scales; b, same, with male scales; c, female, and d, male scale enlarged. From Howard, U. S. Dept. Agl.

Remedial Measures.

In a general way, what has been said of the oyster-shell scale applies to this insect also; but as the scurfy scale is much thinner, winter applications may be also resorted to. Any of the caustic mixtures corrode the scales very readily, and whenever such applications are used as against the San José or pernicious scale, similar applications against the scurfy scale will be equally effective. It is usually not so much that the eggs are injured by the application, but the scales are destroyed and the eggs are washed out by rains and carried to the ground. Even a thorough coating of whitewash will in many cases destroy the insect, which is the most easily controlled of any that occur in injurious numbers.

THE ROSE SCALE.

Diaspis rosæ, Bouché.

This is a snow-white scale about one-tenth of an inch in diameter, somewhat irregular in outline; on the whole, broadly oval in contour. On a badly infested twig there will be seen, besides these broad scales, many of lesser size—not quite so white, more oval in form, and with the yellowish band or point projecting beyond the scale line. We also find a series of much narrower scales, ridged in the center, and these cover the male, all the broad scales being females in every instance. This species attacks rose, blackberry and raspberry, the rose being the most common host. It has a distinct preference for plants grown in the shade, and particularly where, besides being shady, the ground is also damp.

Hibernation may be in any stage from the egg to the gravid female, all stages being found during the winter months. By the beginning of March few eggs remain, the larvæ are generally covered and the majority of all the insects are females ready to reproduce. During May and June eggs and active larvæ are most commonly present, and there seems to be a continuous breeding throughout the season without a regular division into broods.

The larvæ are dull orange in color, with well defined black eye spots and well marked antennæ and legs. Unlike most other scale

insects this larva, when it has once set, does not immediately cover itself with a waxy secretion. It may remain for several days entirely naked, and scale growth is both irregular and slow. If there are only

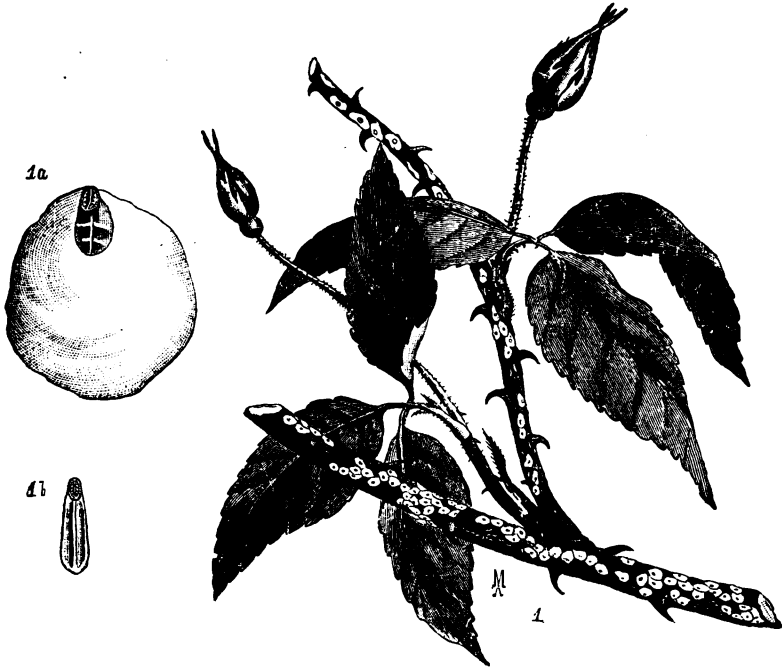


Fig. 11.

The rose scale: female enlarged at *a*; male at *b*. From Div. Ent., U. S. Dept. Agl.

a few of the insects and the plants are vigorous, no perceptible harm will be done; if the plants are well set with fruit or flowers and not too well fed, the scales sometimes cause considerable injury.

Remedial Measures.

In the garden all that is usually necessary to control this insect is to admit light and air and to cut out the worst infested shoots. Rose plants can, as a rule, be entirely cleaned in this way, and blackberry and raspberry plants need little more. Judicious trimming in winter will be all that is necessary in most cases.

Sometimes rose plants are so situated that cutting back is not desirable and then a resort to insecticides is necessary. Winter ap-

plications are best and any of the winter washes recommended for the pernicious scale will answer. The covering is thicker than that of the scurfy scale; but is not so resistant as that of the other species here mentioned. As the insects pass the winter in all stages, one application may not be sufficient, and it will be better to make another toward the latter part of May, when those forms that were in the egg stage and most probably escaped will be in a condition to be reached by insecticides.

THE SAN JOSE OR PERNICIOUS SCALE.

Aspidiotus perniciosus, Comst.

This differs from our other common armored scales by its round form and small size. In size it is as a small pinhead; in shape not very different. In color it ranges from gray to black, the larger

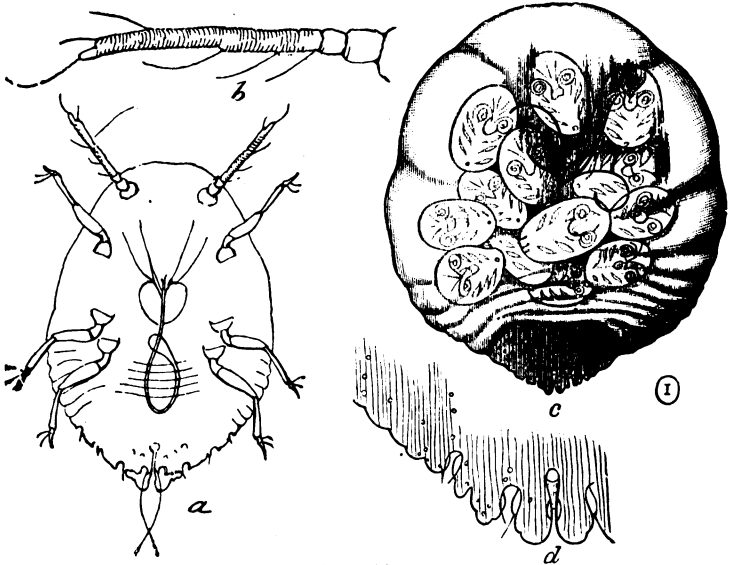


Fig. 12.

The San Jose scale: a, the new-born larva; b, its antenna; c, the adult female, taken from beneath the scale; d, the edge of the anal plate; all very much enlarged.

From Div. Ent., U. S. Dept. Agl.

scales being usually gray, with a yellowish center. This yellowish center distinguishes the pernicious scale from some other forms that occur sparingly on shade and fruit trees. In its younger stages the scale is entirely black.

This species infests almost every shrub and tree ordinarily grown in the garden, although it is not equally destructive on all. It does not attack evergreens, is rarely found on privet—never in numbers enough to be injurious—and seldom occurs on raspberry or blackberry so as to be troublesome. On all fruit trees, except cherry and quince, it is destructive; Osage orange, *Pyrus japonica*, purple beech and even *Citrus trifoliata* are seriously attacked and the Osage orange and *Pyrus japonica* are veritable nests in which the scale breeds and from which it may extend in every direction.

Shade trees, generally, are subject to attack; but except where they are young no material injury is caused. Young European elms may suffer severely, willows of all kinds are likely to be infested and cut leaf and Kilmarnocks are frequently killed. Maples may become infested and the silver maples sometimes considerably so; but I have yet to find a maple of any kind along the streets or in gardens that has been badly infested after it reached any considerable size. In fact, none of the ordinary shade trees have, in my experience, become sufficiently infested by this insect to make it of any account as a shade tree species. This is fortunate in view of the difficulty of dealing with it and limits the work that is to be done to fruit and ornamentals in the gardens.

The winter is passed in the half-grown condition, covered by a black scale. In spring growth is resumed and, somewhere during the early or middle part of May, males appear. They remain about for a day or two only, fertilize the females and disappear. The females grow slowly, and not until the 10th of June, in the latitude of New Brunswick, do we find larvæ. In South Jersey the insects begin breeding two or three days earlier and in the more northern parts of the State the 15th is nearer to the ordinary date when reproduction begins.

The larvæ are small, sulphur-yellow atoms, which are born alive, and each breeding female bears from six to eight daily for several weeks in succession. Usually, within twenty-four hours, the larvæ set, and almost immediately a whitish film forms over the surface. This is the first scale, and at almost any time after midsummer an infested tree will show moving larvæ, the almost snow-white recent sets and every stage from that point through a gray to a black scale. From the time the larvæ first sets to the time when it is sexually mature and ready to reproduce is a little less than five weeks, and

the first born of a female may be ready to become mothers before the original female has ceased to reproduce.

Reproduction continues throughout the summer, and a single pair, starting in June, may become the ancestors of over one thousand million examples before the season closes. Reproduction is most active early in September, and throughout that month larvæ occur in abundance on infested trees. It is the season at which spread is

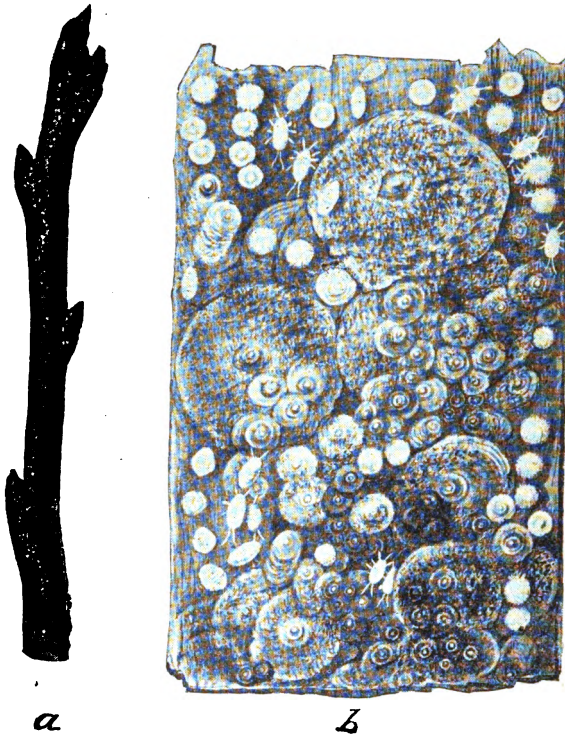


Fig. 13.

The San Jose scale: *a*, on a twig, natural size; *b*, as seen under a hand lens, much enlarged.
Div. Ent., U. S. Dept. Agl.

most general and the agents of that spread are birds and other insects that visit the infested trees. The crawling larvæ get upon anything, including the backs of beetles and the feet of birds, and are carried for considerable distances, causing outbreaks where none had been looked for. An insect that attacks so many different kinds of plants, that breeds so abundantly, and that has no natural enemies to keep it in real check, is, of course, a pest of the first class; and so all gardeners have found it.

Remedial Measures.

Two sorts of campaign can be carried on against this insect. A summer series, directed at the larvæ, and a winter campaign, directed against the hibernating forms. None of the ordinary summer mixtures kill all stages of the scale without endangering the foliage. Larvæ may be killed by diluted oil emulsions or by soap mixtures; say for whale oil soap one pound in two or three gallons of water, depending upon the kind of plant; or the oils in a 5 or even a 10 per cent. dilution, according to the manner in which it is put on and the plant on which it is to be used. In any case, the application will kill only crawling larvæ and very recent sets. Applications must, therefore, be renewed at short intervals throughout the summer to obtain a really effective result. This sort of work is feasible in gardens that are under constant supervision, and in such places the insect can be almost completely cleaned out in a single season. The new forms of petroleum, made soluble in water, will be most effective aids in this sort of campaign.

For winter work more severe applications are necessary as against the scale, and possible with safety to the plant. Perhaps the safest to the plant and very effective against the insects, are the lime and sulphur washes, with or without salt, either boiled or combined by the heat of slaking lime; but these are difficult to make for a small establishment and belong rather to the orchard remedies.

Standing first in effectiveness, but somewhat dangerous in its application, is crude petroleum. Carefully used with an atomizer or through a fine nozzle, undiluted petroleum of a specific gravity of forty-three degrees or over, and made slightly warm, can be applied safely on plants of almost every description and will be almost certain death to every scale that is reached. There is a danger in the use of oil that must be recognized, but when that danger is kept in mind and the proper precautions are taken, there is no more satisfactory material.

An effort has been recently made to render petroleum soluble in water, so that it can be used with greater safety, and this has resulted in the production of a material called "Kill-O-Scale," by the Griffith & Turner Company, Baltimore, Maryland. This can be applied to plants of almost every description, at the rate of one part of the insecticide in twenty parts of water. It is almost too expensive for

use in the orchard, but where a small area only is to be treated it is perhaps the best form in which the oil can be used. Diluted somewhat more, it is also valuable for summer work and more effective than whale oil soap.

Whale oil soap may also be used at the rate of two pounds in one gallon of water. At this strength the soap is itself likely to prove injurious, unless used late in the season.

THE MAPLE PSEUDOCOCCUS.

Pseudococcus aceris, Geoff.

This is a species which, while it belongs to the scale insects, differs from the others here dealt with in many points. About midsummer there may be found on the leaves and trunks of hard maples little, fluffy, white masses that somewhat resemble the cottony maple scale. At first the white shows in the crevices of the bark, then in all other depressions, and finally, in bad cases, the entire trunk may look as if thoroughly whitewashed. The insects will be piled, not in a single layer nor evenly distributed, but in masses half an inch thick or more; great clumps will occur in some situations and in others they will be sparsely scattered. On the leaves the masses will be found on the under side along the veins and whenever they are numerous the leaves may turn yellow and drop before the ordinary period.

If one of these fluffy patches be carefully examined it will be found to consist of a little mass of a stringy, wax-like material, beneath which and at one end is the body of the adult female and her eggs. This female is wingless, pale yellow and rather less than one-quarter of an inch in length. The eggs are also light yellow and are found numerous in the waxy secretions.

The larvæ that hatch from these eggs are like them in color and move about for a considerable period before selecting a place to fix and grow. After midsummer the winged males, which are reddish, will be found crawling over the waxy masses in search of the females. Reproduction continues throughout the season, and on some trees, when badly infested, the appearance is quite unique. No definite scale forms over this insect, which is protected by the waxy strings alone.

Remedial Measures.

As the trunks and branches of trees are selected by preference, we have in most cities and towns a simple and easy remedy. It consists of the ordinary garden hose with sufficient water pressure behind it to wash the insects from the tree trunk. In a number of localities this has been resorted to, and always with good success.

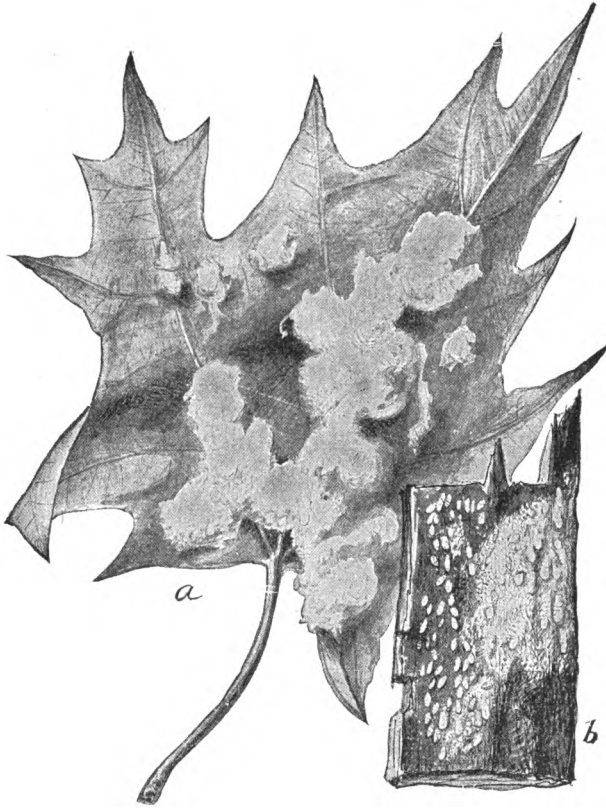


Fig. 14.

The maple pseudococcus: *a*, the cottony masses covering the adult females on leaf; *b*, young of both sexes on bark. From Howard, U. S. Dept. Agl.

The injury to the leaves has never, in my experience, been of sufficient account to make it worth while to use insecticides. They should be raked up as they fall and burnt, together with the insects that may be on them at the time.

Where water pressure is not available, the trunks of the trees may be sprayed with strong soap suds of any kind, or with any of the dilute oil mixtures.

BORERS.

Shade and fruit trees are equally subject to the attacks of borers that feed beneath the bark or in the wood tissue. Sometimes the trunks are attacked; sometimes the branches, and occasionally the roots. Sometimes, beneath the bark, there will be shallow, irregularly winding galleries, ending in a larger, shallow chamber. This gallery is made by a flat-headed borer, called so because the anterior segments are broader than the rest of the body and much flattened, so that it can live in the shallow channel that it has made. Insects of this character usually attack weakened trees only.

Sometimes, also beneath the bark, we find a series of narrow borings—a single up-and-down gallery; one, two or three inches in length and about one-sixteenth of an inch in diameter, and, branching from this center, a large number of laterals, sometimes extending at right angles to the center and sometimes branching in every direction, but always so that they do not cross each other and gradually separate as they extend from the common center. The main gallery in this case has been made by a bark beetle, which laid its eggs on each side close together, and the lateral galleries have been made by the larvæ which hatched from the eggs. These pests also, as a rule, attack trees which are in a more or less weakened condition. This is not universal, applied to bark beetles as a whole, but it is the rule as applied to those that work in the shade and fruit trees that are usually planted. When a tree becomes badly infested by these beetles it might as well be cut out at once. The fact that it was attacked at all is an indication of weakness, and as the attack continues the tree becomes even more weakened and further subject to infestation until it dies. Borers of this kind are very apt to attack hickory and other forest trees growing in lawns or under such conditions that they do not receive a full supply of moisture and plant-food. The most destructive species on city shade trees is the



Fig. 15.
Work of a bark-beetle beneath hickory bark,

WOOD LEOPARD MOTH OR IMPORTED ELM BORER.

Zeuzera pyrina, L.

This is an insect that was accidentally imported over fifteen years ago from some European country and made its start at Hoboken. It spread from that point to Jersey City, and thence northward, toward Paterson, south to Newark, Elizabeth, and recently it reached New Brunswick. Practically all kinds of shade trees and many

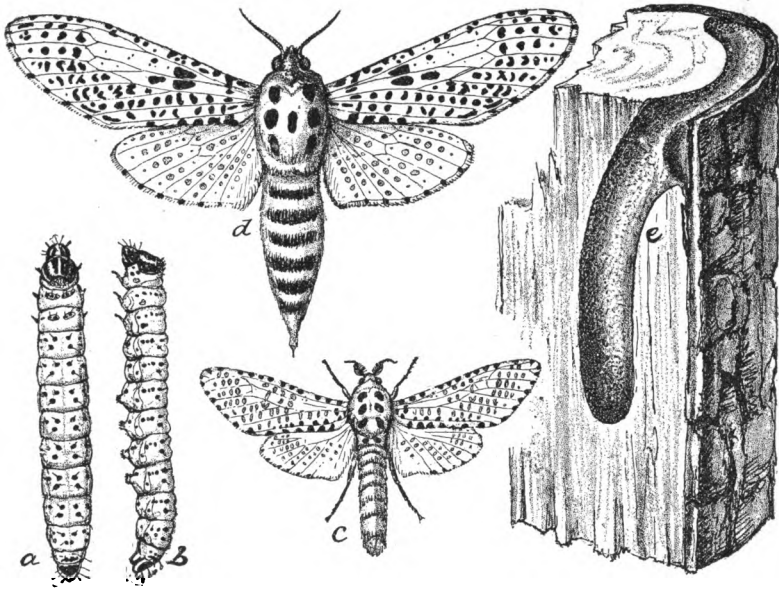


Fig. 16.

The wood leopard moth: *a*, *b*, boring caterpillar from above and side; *c*, male; *d*, female moth; *e*, shows the work of one of the borers. From Div. Ent., U. S. Dept. Agl.

shrubs are attacked by the larva, which is both a borer and a true caterpillar. The parent moth is quite large, the males measuring an inch and a half and the females two and a half inches between the tips of the fore wings. These wings are white with numerous black spots, and the body is black spotted in its anterior portion. The head in the male has a pair of densely feathered antennæ or feelers, and the abdomen extends back an inch and a half or more. Altogether the creature is readily recognizable and is found, during the season in which it flies, around electric lights in the cities where

it occurs. The period of flight begins during the last days of May and extends through June, July and into August. It is during the latter days of June and in early July that the insects are most abundant and the males are always most active around the lights. The females are heavily built and, when the eggs are developing, rarely move far from the trees out of which they were born and upon which they afterward oviposit. The eggs are small, salmon-pink in color, and may be laid singly or in masses, a single adult depositing between five hundred and one thousand or even more. They are usually placed in a bark crevice or other sheltered situation and generally on one of the smaller branches. The little caterpillar, when it hatches, makes its way to the crotch of a small branch, or to one of the nodes or buds and at once bores into the wood tissue. It works downward, toward the base, and grows very rapidly. When it is tired of its quarters, or when they become too narrow, the insect works out; sometimes directly, sometimes by cutting all around on the inside so that the twig breaks off. Then it makes its way further down, selects a larger branch and again begins feeding. Each individual seems to be a law unto itself as to the manner in which it feeds; it may bore a straight channel through the center of the branch, it may eat out a large cavity on one side, or it may deliberately work around and kill it. By the end of the first season the larva is half-grown and has usually made its way to one of the large branches, leaving behind it one or two that will be almost certainly broken by the winter winds.

During the second summer growth is rapid and the larvæ attain a length of two inches or more. On smaller trees they sometimes get into the trunk itself and may completely girdle it; or they may remain in the branches, or, in fact, work in almost any conceivable way, changing their location two or three times during the summer. At the end of this growing season they have reached their full size and, early in the spring following, work close to the surface and form pupæ, which, when the adults are ready to develop, wriggle their way out so that fully half projects beyond the bark when the moths emerge. The moths do not feed. The caterpillars do not feed upon the surface except for a short time, when they change their quarters and start in at a new place. There is no chance of reaching the moths through poisonous applications and practically no chance of reaching the larvæ by means of insecticides.

Thus far the insect has been confined to the cities, and while occasionally in the outskirts specimens are found in trees, it is the exception rather than the rule, and practically no injury is done in orchards or to the trees of smaller towns and villages. The larger the city the greater the injury, and the reason for that seems to be that in such places no birds, except English sparrows, are able to maintain themselves. Wherever this sparrow is not completely in possession the insect is no longer to be feared. In New Brunswick it is only in the very heart of the city that any injury is done, and even there it is slight compared with the trouble in Newark, Jersey City and Hoboken. Newark, whose population is most dense, also suffers most.

Remedial Measures.

Active measures are possible in one direction only. Every badly infested tree should be cut down and burnt, as its death is a mere matter of time at the best. Trees infested toward the tips only should be cut back in winter and the cuttings should be burnt. The openings to the burrows made by the larvæ are easily seen by the trained eye, especially during early summer, when the larva forces great strings of partly digested wood through the opening by which it entered. Where these burrows are in the trunks of valuable trees or shrubs, or in branches that cannot be easily spared, a few drops of bisulphide of carbon may be injected by means of an oil can or a small syringe, and the opening closed with a lump of putty. The vapor of the bisulphide will penetrate the full length of the tunnel and kill the larva, wherever it may be, without injury to the tree. Most of this work can be done during the winter. During the summer the trees should be kept under constant supervision, and wherever signs of borers are noticed the infested wood should be cut out, or the borer should be destroyed by means of the bisulphide of carbon.

There are undoubtedly natural enemies other than birds that tend to keep this borer in check. If the work of these natural enemies is supplemented by systematic work on the part of those in charge of the trees, a great lessening of injury will result. If in the public parks and squares in the cities other birds than sparrows could be introduced and protected, the work would be much simplified.

THE MAPLE TREE SESIID.

Sesia acerni, Clem.

This is another caterpillar borer, found in soft maples more generally. It makes round holes, not over one-eighth of an inch in diameter, in the solid wood, and the caterpillar is white, or nearly so, with

short, stiff hair on the surface. It comes to maturity in spring, and some time during the latter part of May or June forms its pupa near the outer surface of the trunk. When ready to change to the adult stage, the pupa wriggles out for about half its length, just as the pupa of the leopard moth does, and, usually very early in the morning, the moth emerges. This is rather a handsome little creature, yellow with red trimmings and bandings, the wings thin and transparent. It is one of the "clear wings" and looks more like a wasp than a moth. Sometimes maples are infested by a large number of these insects, but experience indicates that little real harm is done to the trees, provided water does not get into the holes to cause decay. The borings are

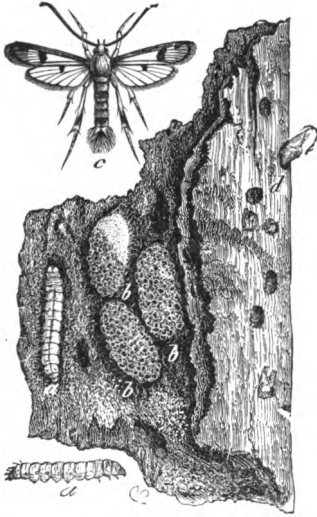


Fig. 17.

The maple tree sesiid: a, the larva; b, cocoons in cavities made by larva; c, the adult moth; d, pupa shell projecting from trunk.

After Riley.

in the heart-wood only, and as the heart-wood has little to do with the actual nourishment of the tree, there is no immediate weakening. Where the insects are observed in numbers it will pay to white-wash the trunks several times during the season. This will be effective—first, by repelling the moths that would otherwise oviposit on the trunks; and, second, it will cover over or partly fill the small holes that have been made by the insects. A tree once infested will, under ordinary circumstances, remain infested, and there seems to be an individual attraction that does not extend to even neighboring trees of the same species.

THE WHITE-MARKED TUSSOCK MOTH.

Orgyia leucostigma, S. & A.

The most common of the caterpillars found on city shade trees is that of the white-marked tussock or vaporer moth. It is pre-eminently a shade tree pest, rarely found in gardens and yet more rarely on trees away from cities and towns. In New York and Philadelphia it is *the* troublesome pest on streets and in the city parks. As we get into smaller towns and villages the pest becomes even less, until finally, in the country, it disappears almost altogether.

This caterpillar is recognizable by its bright red head and by the velvety black back, on which there are four thick tufts of creamy colored hair, looking like round paint brushes. At either end is a pair of long, black, plume-like hair pencils and there are shorter tufts of hair along the sides. In general, the caterpillars give the impression of being yellow, with black and bright red markings. They are first noticed in May, on practically all kinds of deciduous shade trees. When suddenly disturbed they drop, suspending themselves by silken threads attached to the leaves from which they started.

They become full grown toward the end of June and then begin to wander, leaving the trees upon which they have fed, crawling to others some distance away, or along fences to gate posts, tree boxes or to any sort of shelter where, in some angle, they spin a loose, dirty, gray cocoon. The caterpillar has only a small supply of silk and with this it mixes hair from its own body, so as to make a more complete covering. In this cocoon the change to the pupa takes place and in about two weeks adults appear. The male has two pairs of dusty, gray wings, the anterior crossed by narrow, black lines and with a more or less prominent white spot toward the lower outer angle, the posterior without markings. The feelers or antennæ are broadly feathered and plume-like, while, when at rest, the tufted forelegs are extended straight forward. The expanded wings measure rather more than an inch from tip to tip.

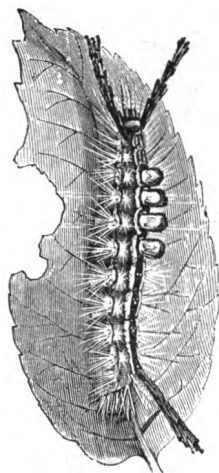


Fig. 18
Caterpillar of the tussock
moth.

The female looks entirely different; is without wings; somewhat slug-like, and consists principally of an abdomen distended with eggs. When she emerges from the pupa she crawls upon her cocoon, where she is found by the male, and to which she clings, almost motionless, for the balance of her life. Egg-laying begins soon after impregnation, the eggs being laid upon the old cocoon and covered with a frothy mass, which soon becomes hard, brittle, and is then snow-white. From this egg mass a second brood of caterpillars hatches in July and the life cycle is repeated, the second lot of adults appearing in

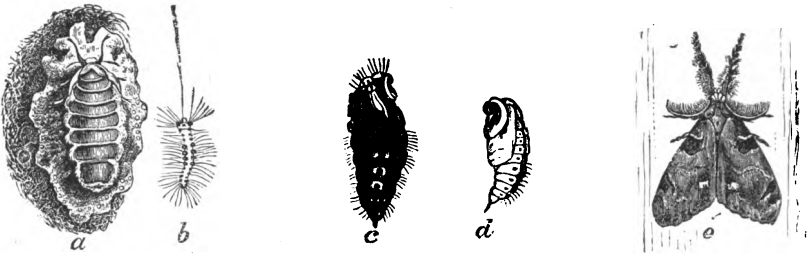


Fig. 19.

The white-marked tussock moth: *a*, the wingless female ovipositing on the empty cocoon; *b*, young caterpillar suspended by a silken cord; *c*, pupa of the female; *d*, pupa of the male; *e*, male adult or moth. After Riley.

September. The eggs laid at that time remain unhatched during the winter, and as the masses become wet and covered by dust, they gradually change to dirty gray or brown, losing their conspicuous character.

It should be especially noted that the female is wingless; that she does not move from the place where she hatches, and that the only period in which the insects spread from one tree to another is in the larval stage, when either a mature caterpillar, in its wanderings in search for a place to pupate, climbs up the trunk, or when from some egg mass in the vicinity the young find their way to it.

Remedial Measures.

Whenever this insect appears in the garden, pick off the egg masses during the winter; they are readily seen and the task is not difficult. On shade trees the same method should be adopted wherever possible, and even a single tree may be kept clean in this way, provided the branches do not intermingle with those of another that is infested.

When the solitary tree has been once completely cleared of eggs, it can be kept clean by putting around the trunk, just below the branching, a broad band of cotton batting. This band should be tied near the bottom by a soft string that will yield to some extent to growth, and then should be turned down so as to form a sort of inverted funnel, making a barrier that cannot be surmounted by any caterpillar. A belt of tree lime, tree tanglefoot, or other sticky material will answer the same purpose.

If a tree is found to be badly infested, and it is desired to prevent defoliation, that may be done by spraying with any one of the arsenites. As to the strength and character of the material, reference should be had to the section dealing with insecticides.

THE BAG WORM, DROP WORM OR BASKET WORM.

Thyridopteryx ephemeraformis, Harr.

This curious insect is sometimes very troublesome and, unlike most other leaf-feeding caterpillars, attacks conifers as readily as it

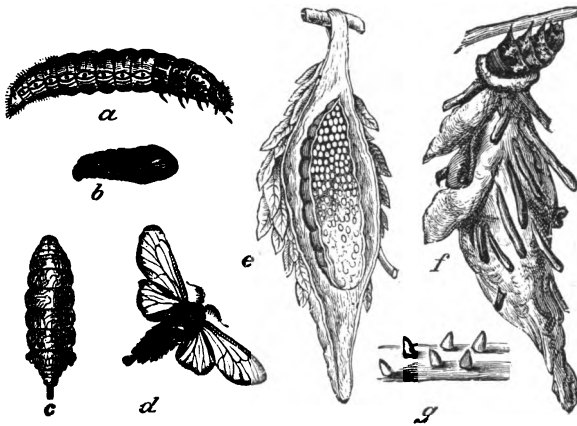


Fig. 20.

The bag worm : *a*, the caterpillar removed from its case; *b*, male pupa; *c*, female adult; *d*, male adult; *e*, a bag cut open to show the egg-mass as it appears in winter; *f*, caterpillar with bag of full size; *g*, very young larvae with little conical bags carried upright.

does all kinds of deciduous foliage. *Arbor vitæ* hedges are especial sufferers and are often killed when the insects have not been discovered in time.

The common name, bag worm, is derived from the fact that the larva is sheltered by a bag, basket or case, which it carries about as a shelter and in which it undergoes its transformations. These bags are often prominent objects on leafless trees and shrubs in winter, and, when closely examined, two distinct sizes may be noted. The smaller will be found generally empty, or with the remnants of a pupa shell only, while the larger will be found to be usually filled with a yellowish, powdery mass. If this larger bag is carefully cut open, we will find that it, too, contains the shell of a pupa; but filled with numerous small yellowish-white eggs, surrounded by a delicate, fawn-colored, silky down.

Some time in May, small, active caterpillars develop, which, after working out of the parent sac, at once begin to construct a bag or sac of their own. This little sac is made from bits of leaf tissue, fastened together with threads of silk to form a conical case, just large enough to contain the insect. At first it is carried upright; but as the larva increases in size and adds to the sac it becomes too heavy and is allowed to hang down and fastened to a twig or leaf by threads of silk when the insect is not actually moving. All sorts of fragments are used in making the sac; but whatever may be the outer covering, the inside is always lined with soft silk.

The young larva is uniformly brown; when fully grown that portion of the body covered by the bag is soft, light yellowish in color, while the head and leg-bearing rings, are horny and mottled with dark brown and white. The numerous hooks with which the small fleshy legs in the middle of the body are furnished, enable the larva to cling so tightly to the lining of the bag that it is with difficulty pulled out. When ready to transform to the pupal stage, the larva is seized with a wandering fit and travels for long distances, to other trees or shrubs, and thus provides for the spread of the species. Sooner or later a suitable place is found, the bags are attached to a twig or other support and the pupa is formed.

The bags from which the male moths are to issue become rather more than an inch in length, while those which are to produce the females reach nearly double that size. In both sexes the pupæ rest with their heads downward in the bag. In about three weeks the male works its way to the lower end and half way out of the bag, then its skin bursts and the moth appears—a small creature, with a

black, hairy body and transparent, stumpy wings. It is swift of flight and, owing to its small size, transparent wings and short life, is rarely observed.

The adult female is grub-like, entirely without legs or wings. She pushes her way partly out of the pupa shell, her head reaching to the lower end of the bag, and there, without changing her position, she awaits the male. After impregnation she works her way back into the pupa skin, filling it with eggs as she again recedes. When all the eggs are laid she wriggles out of the bag for the first and only time in her life, drops to the ground and perishes. The elastic mouth of the bag closes after her and the eggs are thus securely protected until they are ready to hatch the ensuing spring.

Remedial Measures.

If these bags are noticed during the winter, there is nothing better than simply picking them off. *Arbor vitæ* and other coniferous plants should be especially attended to, because these do not survive defoliation. With a little practice the bags can be readily seen on even a thick hedge. On trees the matter is more difficult, but even there the work will pay, and if thoroughly done there will be no caterpillars of this kind during the season following.

If the insects are not noticed until summer, when they are at work upon the foliage, any of the arsenical sprays may be used, except on conifers, where only the arsenate of lead is safe.

THE FALL WEB WORM.

Hyphantria cunea, Drury.

This insect derives one part of its common name from the fact that the caterpillar makes a tent or web on the infested tree, and the other from the fact that it is much more abundant in late summer than earlier in the season. The winter is passed in the pupal stage, in a slight cocoon of silk intermingled with the hairs of the caterpillar. Early in May the adult makes its appearance, and is a snow-white moth or miller; the anterior or fore wings often more or less

black-spotted. During the day it may be found resting on trees, tree boxes, fences or even on leaves; but during the night it flies readily,

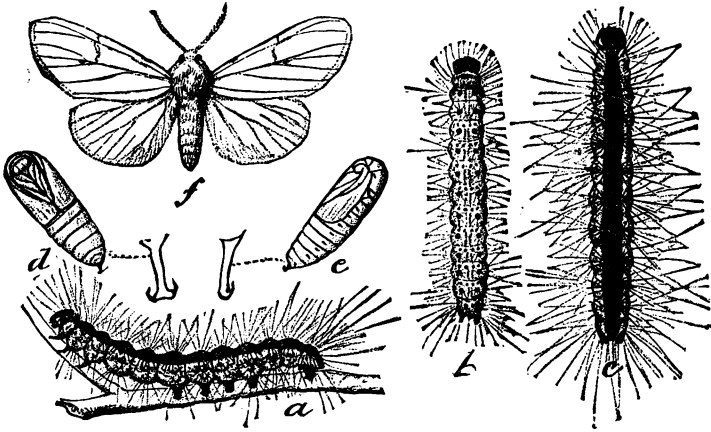


Fig. 21.

Fall web worm: *a*, caterpillar from side; *b*, *c*, same from above, showing variations; *d*, *e*, the pupa from front and side; *f*, the adult moth. From Div. Ent., U. S. Dept. Agl.

and during that time the female lays her eggs. These eggs are placed in one mass on the under side of a leaf, ranging from four to five hundred; each egg bright yellow in color, nearly spherical and ornamented by numerous regular pits. In about ten days they hatch and the caterpillars at once spin a little tent for their common shelter. As they increase in size they draw in more leaves, twigs, and sometimes even branches, so

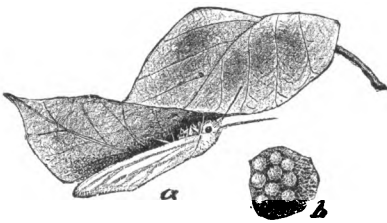


Fig. 22.

Female laying eggs; individual eggs enlarged at *b*.

that the nest may become from two to three feet across in its largest dimension.

The first brood is rarely abundant enough to attract much attention, and the nests seem to be smaller than those found later in the season. Early in July caterpillars are full grown, leave the nests and make cocoons in any convenient shelter nearby. Moths issue in a few days and shortly afterward are ready to lay eggs in turn.

When the second brood appears, in July or early August, the tents are so much more numerous that they attract more attention and the insects grow so fast that unless measures are taken at once the infested trees may suffer defoliation. The nest or tent is a shelter merely, and from it the caterpillars work out to feed in every direction, returning to rest at certain periods of the day. Late in August and during the first half of September the larvæ of the second brood leave the nests and wander, sometimes for considerable distances, before they change to the pupal stage.

The first brood seems to suffer little from parasitic attack, and most of the caterpillars complete the change to the adult condition. The second brood is, as a rule, greatly parasitized, and a very small percentage of the specimens that become full grown complete their transformations. This accounts for the fact that the spring brood is usually a small one, and also for the fact that sometimes, when conditions favor the caterpillars rather than the parasites, the species runs away from its checks and for a year or two will become plentiful enough to do considerable mischief.

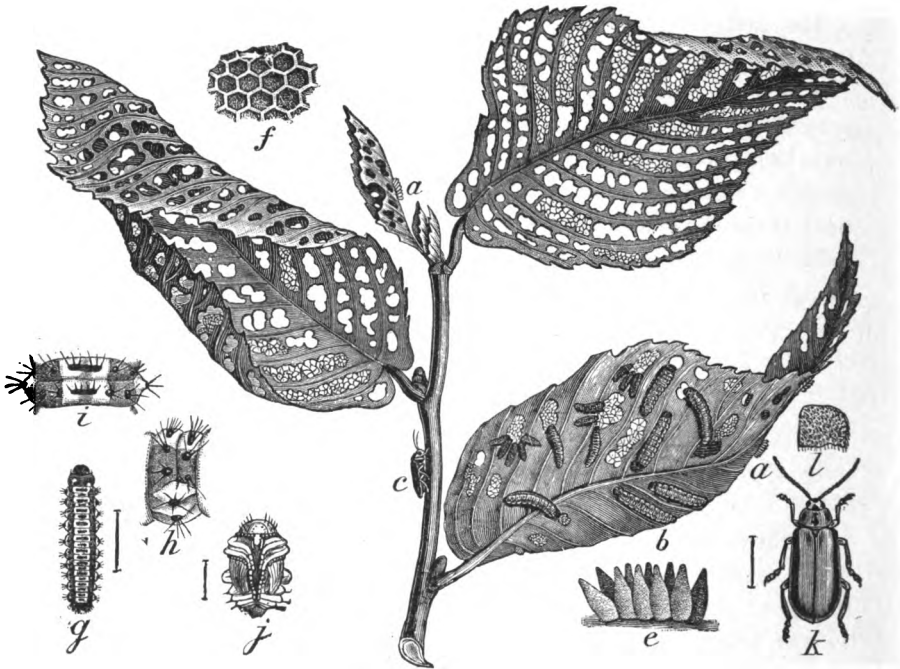
Remedial Measures.

In the garden this insect is readily controlled. As soon as the first trace of a nest is noted it should be torn out and the entire brood killed. As the tent then takes in only one or two leaves this is an easy matter, and there is no danger of mutilating any tree or shrub.

On shade trees, where the nests cannot be readily gotten at, the foliage at the points where the nests are observed should be sprayed with an arsenical poison. There is no necessity for spraying the entire tree, because the insects feed only in the immediate vicinity of the nest so long as there is anything to eat at that point. If the second brood becomes abundant and nests are seen all over the tree, then, of course, the entire tree should be sprayed. The caterpillars succumb very readily to arsenical poisons while they are still small; therefore, the earlier the spraying is done, the less the foliage will be eaten and the more easily will the insects be destroyed.

THE ELM-LEAF BEETLE.*Galerucella luteola*, Müll.

This insect is confined in its attacks to elms, and prefers the European to the American varieties. The winter is passed in the adult condition and the adult is a beetle, about one-quarter of an inch in length and less than half that in width, dull yellow in color with a black stripe on each wing-cover. These adults begin to show them-

**Fig. 23.**

The elm-leaf beetle: *a, a*, egg patches on leaves; *b*, larvæ feeding; *c*, adult; all natural size; the holes eaten through the leaves are by the adults, the scraped surfaces are by the larvæ; *d*, egg mass; *e*, surface of an egg; *g*, larva; *h, i*, larval details; *j*, pupa; *k*, beetle; *l*, surface of elytra; *e* to *l* enlarged. From Div. Ent., U. S. Dept. Agl.

selves about the time the first elm leaf approaches full size, and immediately feed, eating irregular holes through the leaf tissue. If the beetles are at all numerous, the foliage, by the time that it is fully out, will appear as if loads of shot had been fired through it in every direction. During the latter part of May and in early June, bottle-shaped eggs are laid on the under sides of the leaves,

arranged in a double row in groups of from twenty to forty. The first larvæ appear about June 5th, and others continue to hatch from the egg masses until after the 20th of that month. These larvæ are yellowish, slug-like creatures, with black dots and tubercles that are set with bunches of short bristly hair. They usually feed on the under sides of the leaves and do not eat through the tissue—they take only the lower layer of cells and therefore scrape rather than eat. The result is that, for a time, the leaves retain their form and appearance, and not until the larvæ are nearly full grown does injury become greatly apparent. Then the foliage begins to turn brown and very suddenly the tree looks as if a fire had swept through it.

Beginning during the last days of June and continuing until the middle of July, larvæ crawl down the trunks to the base, and there, among the grass on the surface of the ground, they change to yellow pupæ. Many of the larvæ do not come down all the way, but get into the bark crevices and in such shelter change to the pupal stage. Adults develop about a week after the pupa has formed, and, usually about the beginning of August, the summer brood of beetles is found most abundantly. In the latitude of New Brunswick, and in New Jersey generally, there is only a partial second brood or none at all. Ordinarily, the beetles that hatch in summer feed for a few days and then gradually disappear. By the middle of August nothing more is seen of them and, as a whole, they are in hibernating quarters, from which they will not again emerge until spring of the year following.

This insect has few natural enemies among the predatory or parasitic forms; but during the few years last past has been attacked during the latter part of each summer by a disease which killed off full-grown larvæ and pupæ in enormous numbers. For a time elm trees in certain cities and throughout a large portion of the State were annually defoliated to such an extent that many were killed, and it became a question whether it was not really cheaper to cut them out and plant other trees rather than treat with insecticides. That the insects could be kept in check was proved by work done not only at New Brunswick but in other portions of the State; and on the college campus the large elms were sprayed each year for several years in succession. Then the disease already mentioned seemed to establish itself more firmly each year, and for the three years last past it has not been necessary to make insecticide applications.

Whether this control is a permanent one, or whether, under favorable conditions the insects will again become injurious, it is impossible to say. At all events it is advisable for those who have charge of elm trees to watch this beetle closely, and if at any time the number found feeding in early spring is sufficient to make it probable that injury will be caused, prompt action should be taken.

Remedial Measures.

As this insect is a feeder upon leaf tissue, arsenites are indicated, and, as a matter of fact, have proved themselves effective. Paris green has been most generally employed and, at the rate of one pound in one hundred and fifty gallons of water, forms a satisfactory remedy. Arsenate of lead, at the rate of one pound in seventy to seventy-five gallons of water, has also been used to good advantage and is preferable because of its greater lasting qualities. In any case where the insect is to be dealt with by insecticides, a spraying should be made as soon as the first feeding by the adults is noticed. This spraying is very important, because, if the beetles can be killed off before they lay eggs, there will be no larvæ to deal with later. As both sexes hibernate and the ova develop after the beetles have begun to feed, there is a period of a week or ten days during which they may be reached before egg-laying begins. Where only a few trees are to be looked after, a second spraying, made about a week after the first, is desirable. The reason is that the foliage at that period develops so fast that a week after the treatment there will be an abundance of new leaves upon which the beetles may feed safely. If it becomes necessary to deal with the larvæ, spraying may be delayed until hatching from the eggs is quite general; then the application should be made very thoroughly, and it is now important to reach the undersides of the leaves, rather than the upper. The beetles eat the entire leaf tissue and it makes no difference whether the poison is on the upper or on the under surface. The larvæ eat only the lower layer of cells, and, even if the upper surface be fully covered by the arsenical poison, they may not get even a particle. It should be emphasized, then, that whenever a spraying is made, having for its object the destruction of the larvæ, every effort should be made to reach the under side of the foliage. It is the neglect of this point that has resulted in the lack of satisfactory results in many cases.

SLUGS.

Under this general term the gardener usually recognizes caterpillar-like creatures that feed upon his roses, currants and sometimes pear and cherry foliage.

The currant slug is well known and when unchecked defoliates the plants completely, leaving only half-grown or ripening fruit, without a trace of shelter. On roses the foliage is scraped, the leaves turn brown, shrivel, and the plants lose their beauty in proportion to the number of insects that feed upon them. The currant slug is green, with large black spots, and has the habit of curling the end segments of the body around the edge of the leaf. The rose slugs are green, as a rule, without obvious spots, and, while there are some that have much the same habits as those found on the currant, there are others that feed on the upper surface only and are fully extended.

On pear and cherry the upper side of the leaf is scraped and the slug is blackish-brown or very dark olive green, without spots or marks, viscid or gummy in appearance and to the touch. The parents

of these slugs are saw flies, and are inconspicuous, transparent, winged insects, rarely seen by the gardener. There is quite a variation in the life history, but as the life history does not aid us in the control of these species it will not be necessary to go into detail.

All these slugs or saw-fly larvæ are peculiarly susceptible to the action of white hellebore, and a decoction of white hellebore is the most usual remedy to be applied. The decoction is made by steeping an ounce of the powder in a quart of boiling hot water and adding sufficient cold water to make one gallon of spraying mixture. Thoroughly applied this will kill any of the slugs in short order. It

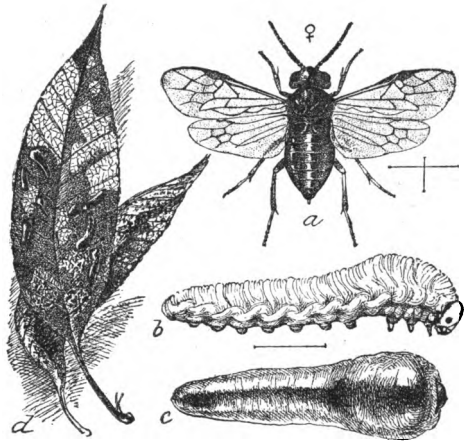


Fig. 24.

The pear slug, *Caliroa cerasi*: a, adult; b, c, larva from side and above; all enlarged; d, leaves eaten by the larvæ. From Div. Ent., U. S. Dept. Agl.

is a contact poison and loses its effectiveness in a short time. It is essential, therefore, that it shall be used when quite fresh, and that it shall reach all the insects that may be feeding upon the plants.

A better and more lasting remedy is the arsenate of lead. This may be safely applied to the foliage of any garden plant likely to be infested, and once sprayed the foliage will remain safe for a long time. All the slugs succumb readily to arsenical poisons and complete exemption from trouble may be easily secured. None of the ordinary shade trees are subject to destructive attacks by larvæ of this character.

INSECTICIDES.

As against those insects that feed upon plant tissue and are to be reached through the stomach, there is nothing better than arsenic in some form. Paris green is the poison most generally employed and is, on the whole, the cheapest and most easily available. Paris green of good quality contains about sixty per cent. of arsenic, combined with copper in such a way as to be practically insoluble in cold water and only sparingly soluble in warm water. By adding one pound of lime when the Paris green is mixed up, the remaining free arsenic is combined. It may be used with safety on deciduous shade trees of all kinds at the rate of one pound in one hundred and fifty gallons of water. It may be used on most fruit trees at the same rate, but on peach and plum is apt to cause injury. It should not be used on tender garden plants and must not be used on conifers of any kind.

The safest arsenical poison is arsenate of lead. It may be purchased in paste form in one-pound (or larger) boxes, and is harmless to all sorts of foliage at any reasonable strength. At the rate of one pound in fifty gallons of water it kills practically all leaf-feeding insects, and may be used on even conifers with absolute safety. Against most leaf-feeding insects one pound in seventy-five gallons of water will prove satisfactory, and, used at that strength, its cost is about double that of Paris green. Its advantages are harmlessness to foliage, which makes it safe to give into the hands of careless laborers, and adhesiveness, remaining upon the foliage a longer time than any other of the stomach poisons. On the whole, therefore, arsenate of lead is recommended, not only for the garden, but for shade trees in cities, towns and villages. Under ordinary circumstances it is better to buy the arsenate in paste form, ready made. Where much of it is to be

used and where an intelligent man superintends the work, a considerable saving may be effected by mixing the raw materials as needed. Arsenate of lead is a combination of arsenate of soda (four ounces) with acetate of lead (eleven ounces). These materials should be separately dissolved in wooden pails, in water enough to do it completely. Then one solution may be poured into the other, stirred thoroughly for a few moments and the combination is arsenate of lead. If allowed to stand, a white precipitate will settle to the bottom, and represents the poison itself. If the combination is diluted to make from fifty to seventy-five gallons of water, the settling will be slow, and practically the entire material may be sprayed without any stirring. That is another advantage, because one part of the mixture will not be very poisonous and another practically harmless, as is likely when Paris green is used and the mixture is not kept sufficiently stirred. It is important, if the arsenate of lead is to be made as used, that the chemicals employed should be of good quality. This point must be insisted upon, because failures have resulted from impure chemicals. The acetate of lead is especially liable to contain substances that will interfere with proper combination.

As for contact poisons, fish oil soap will reach more cases than any one other material, and in most instances it will pay to buy the soap ready made up. There are several brands on the market that answer every purpose, and almost every dealer in insecticides has some reasonably good material of this character. If it is desired to obtain the cheapest mixture and to be absolutely certain of an even composition, the soap may be readily made according to the following formula, first recommended by the New York (Geneva) Station:

Caustic soda.....	6 pounds.
Water	1½ gallons.
Fish oil.....	22 pounds.

Dissolve the caustic soda in warm water, warm the oil until it is thoroughly fluid, then pour the oil slowly into the soda solution, stirring thoroughly and constantly until the combination is complete. Complete and thorough stirring is essential to success. A good grade of caustic soda should be used, say 75 per cent. or over. Fish oil of almost any kind will answer and it need not be refined. The amounts given will make forty pounds of soap, and the cost, at the market price of materials, will be a trifle less than 3 cents per pound. Twenty-

two pounds of oil is about three gallons, so that a full pint, or a little over, may be considered the equivalent of a pound of oil. If a slight excess of soda is used no harm will be done. This makes a soft soap, but though when warm it stirs readily, when cold it forms a stiff, cheesy mass. The soap made according to this formula is stronger than most of the fish oil soaps on the market, and, as against most green plant lice, may be used at the rate of one pound in seven gallons of water. After it has been tested and the proper strength for the different insects has become known to the user, it may be relied upon to do the same work every time when made in the same way. It is, of course, possible to make smaller quantities if desired; the proportion being held carefully. Where it is necessary to summer-spray shade trees to kill scales or plant lice, this will prove the cheapest and most reliable contact poison that can be used.

Where the San José scale must be dealt with in the garden, there is, perhaps, no better material on the market at present than "Kill-O-Scale." This is a preparation of petroleum made soluble in water and is one of the most active contact insecticides that we have. Any other soluble petroleum would probably answer as well, and while these preparations are rather expensive, they have the advantage of being always ready and requiring nothing except a simple dilution with water when the application is to be made.

Tobacco has been already referred to in connection with the treatment of plant lice and its range of usefulness is there explained.

For the gardener arsenate of lead and fish oil soap are really all that are necessary. When large trees are to be dealt with, Paris green may be substituted for the arsenate of lead, although the latter is preferable, and fish oil soap or soluble petroleum will prove most useful where contact insecticides are needed.

Undiluted crude oil has been referred to and is the most effective contact insecticide that we have. Unfortunately, its use is attended by considerable danger to the tree if it be not carefully applied. Nevertheless it is sometimes advisable, or even necessary, to employ it, and in such cases danger may be reduced to a minimum—*first*, by using oil having a specific gravity of at least 43° on the Beaumé scale—the insecticide oil supplied by the Standard Oil Company is such an oil; *second*, have the oil slightly warmed, say 70° to 80°, so that it will spread well; and, *third*, apply in a very fine spray, just enough to cover. Applied with an atomizer, the oil is almost

always safe in careful hands; but it will not do to intrust it to an ordinary laborer.

The lime, salt and sulphur wash has also been referred to in connection with the San José scale; but this is not advised for garden use and is not needed for use on shade trees. If there are trees infested by the San José scale in such numbers as to require a large quantity of material, this wash may be needed, and in that case full directions for making and applying will be found in Bulletins 169 and 178 of the Station; either of which may still be had.

INSECTICIDE MACHINERY.

At present it is possible to buy machinery to spray a single bush or the tallest tree. There are bucket pumps, syringes, atomizers and anything from these to power sprayers, giving pressure to any desired extent. In the garden, a compressed air sprayer is on the whole the most convenient. Such sprayers, holding from one to five gallons of liquid and working by means of a pump that compresses the air above the material to be sprayed, are very practical and will serve to deal with all ordinary garden plants, shrubs or even small trees. A five-gallon Leggett sprayer has served for the experiments in my own garden, and other advertised machines of the same capacity are as good. The nozzles attached to such outfits usually leave much to be desired, and in general it will pay to take off those that are furnished and substitute a Vermorel, that will give a fine and abundant spray. Where roses, small fruits and other low plants only are to be dealt with, an even simpler outfit will answer. Atomizers are now made with cans holding one to two pints of mixture and making an extremely fine spray in practical use. In many gardens that will be all that is needed and the cost amounts to only a dollar or two. It will pay to buy one made of brass and of good quality throughout. Where a bucket pump or anything above it is used, the Vermorel nozzle should be made a part of the outfit, and, in general, it may be said that it does not matter so much what the pump is, provided it gives a reasonably constant pressure—if the nozzle makes a fine spray with force enough to penetrate through the covering of protected insects or the pubescence on the surface of some leaves. A sprinkling pot is the poorest thing that can be used, because the particles from the rose are so coarse that they will either roll off without wetting leaf or

insect, or will waste at least as much material as is actually effective. Every seedsman nowadays has pumps and atomizers, and most of the reputable dealers can be relied upon to recommend only those that are at least workable.

When the matter of dealing with large trees comes under consideration an altogether different kind of outfit is needed, and it is practically impossible to make recommendations that will serve for all communities. The very fact that almost every maker of pumps has some special outfit meant to deal with such trees makes it difficult to recommend one particular type. In general, any pump or outfit that will be satisfactory in the orchard will be equally satisfactory on shade trees in cities; but, on the whole, shade trees are larger than orchard trees and some machines that serve very satisfactorily in the orchard are either clumsy or otherwise objectionable in city streets. Where only a few trees are to be treated, a good pump working by a vertical lever, giving a pressure of one hundred pounds to the inch, will prove satisfactory. The suction pipe of such a pump may be arranged so as to draw from either a tank or barrel, or so as to be placed into half a dozen barrels in succession, if the spraying wagon will hold that many. There should always be a strainer at the end of the suction hose so as to prevent particles that will not pass through the nozzle from getting into the pump at all. An air chamber of good size is always desirable to maintain an even pressure, even if pumping should stop for a short period. Valves should be metal, or at least of some material that will not require frequent packing. The working parts should be of brass and should be kept as clean and well oiled as possible, to prevent corrosion. Where caustic mixtures are to be used to any considerable extent, the pump should be especially well looked after and should always be washed out after a spraying to prevent wear. When it becomes necessary to deal with a large number of large trees in a city or town, it will be always necessary to get an outfit especially adapted, and power will be advisable. In such cases each community will obtain just that machine which will answer its own purposes best and no specific recommendations can be made. So many considerations will enter into account that what will answer for one municipality may not be satisfactory for another.

I have recommended for several of our communities the "Niagara sprayer," power for which is furnished by liquid carbonic acid gas. This requires no special skill to operate, is noiseless, gives an even

pressure and the pressure may be promptly raised to any point necessary to secure satisfactory results. I do not say that it is the best machine for all purposes; it is a good machine for many purposes. It is suggested that when any community having a considerable number of trees to deal with desires to secure an outfit, it communicate with the Experiment Station and obtain such information as may be needed.

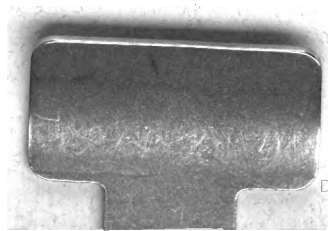
In every case the nozzle is the most important part of the outfit. There must be sufficient power, but there must also be the nozzle which is capable of throwing a fine spray with enough force to cover a reasonably large surface. Nothing known to the writer is better than the Vermorel nozzle, or some one of the modifications that work on the same principle.

CLASSIFIED LIST OF SHADE TREES.

The following list of shade trees, based on that prepared by Mr. B. E. Fernow, chief of division of forestry, U. S. department of agriculture, for the Brooklyn Tree Planting and Fountain Society, is arranged in the order of least susceptibility to insect attack, though none are entirely exempt. It is not intended to suggest that they are the best in the order named, except so far as freedom from insect attack in New Jersey is concerned. Dr. Halsted has kindly marked the list for fungous troubles, and the numbers in parenthesis following the names indicate the order of their freedom from disease, No. (1) indicating the species least affected.

- Tree of Heaven (Tallow tree). *Ailanthus glandulosus*. (3.)
- Ginko, or Maiden-hair Tree. *Ginkgo biloba*. (1.)
- Sweet Gum. *Liquidamber styraciflua*. (2.)
- American Linden. *Tilia americana*. (7.)
- European Linden. *Tilia vulgaris*. (8.)
- Small-leaved Linden. *Tilia microphylla*. (9.)
- Tulip Tree. *Liriodendron tulipifera*. (6.)
- Cottonwood Poplar. *Populus monilifera*. (19.)
- Horse Chestnut. *Æsculus hippocastanum*. (18.)
- Oriental Plane Tree. *Platanus orientalis*. (20.)
- American Plane Tree. *Platanus occidentalis*. (21.)
- Box Elder. *Negundo aceroides*. (10.)

- All oaks. *Quercus* Sp. (11.)
All maples. *Acer* Sp. (12.)
All willows. *Salix* Sp. (13.)
American Elm. *Ulmus americana*. (17.)
Slippery Elm. *Ulmus fulva*. (16.)
Scotch Elm. *Ulmus montana*. (15.)
European Elm. *Ulmus campestris*. (14.)
Black Locust. *Robinia pseudacacia*. (5.)
Honey Locust. *Gleditschia triacanthos*. (4.)



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